SERVICE MANUAL

FISHER

STEREO CASSETTE DECK

CR-9070

(EUROPE)

142 529 00

SPECIFICATIONS

Track System	4-track, 2-channel
Recording System	High Bias (210 kHz) Dolby* HX PRO
Noise Reduction	Dolby* B NR, Dolby* C NR
Mechanism	Full Logic Control
Heads	
Rec/Play	PC-OCC Amorphous Conbination Head
Erase	Ferrite Head
Motors	DC Governor Motor DC Motor
Tape Selector Switch	Automatic (Normal, CrO_2, Metal)
Level Indicator	FL Meter (16 x 2)
Wow and Flutter	0.05 % WRMS
Fast-Forward/Rewind Time	
(C-60 Tape)	Aprrox. 100 sec.
Frequency Response (MPX Filter OFF)	
Normal Tape	15 Hz ~ 20 kHz [±3 dB]
CrO_2 Tape	15 Hz ~ 20 kHz [±3 dB]
Metal Tape	15 Hz ~ 22 kHz [±3 dB]

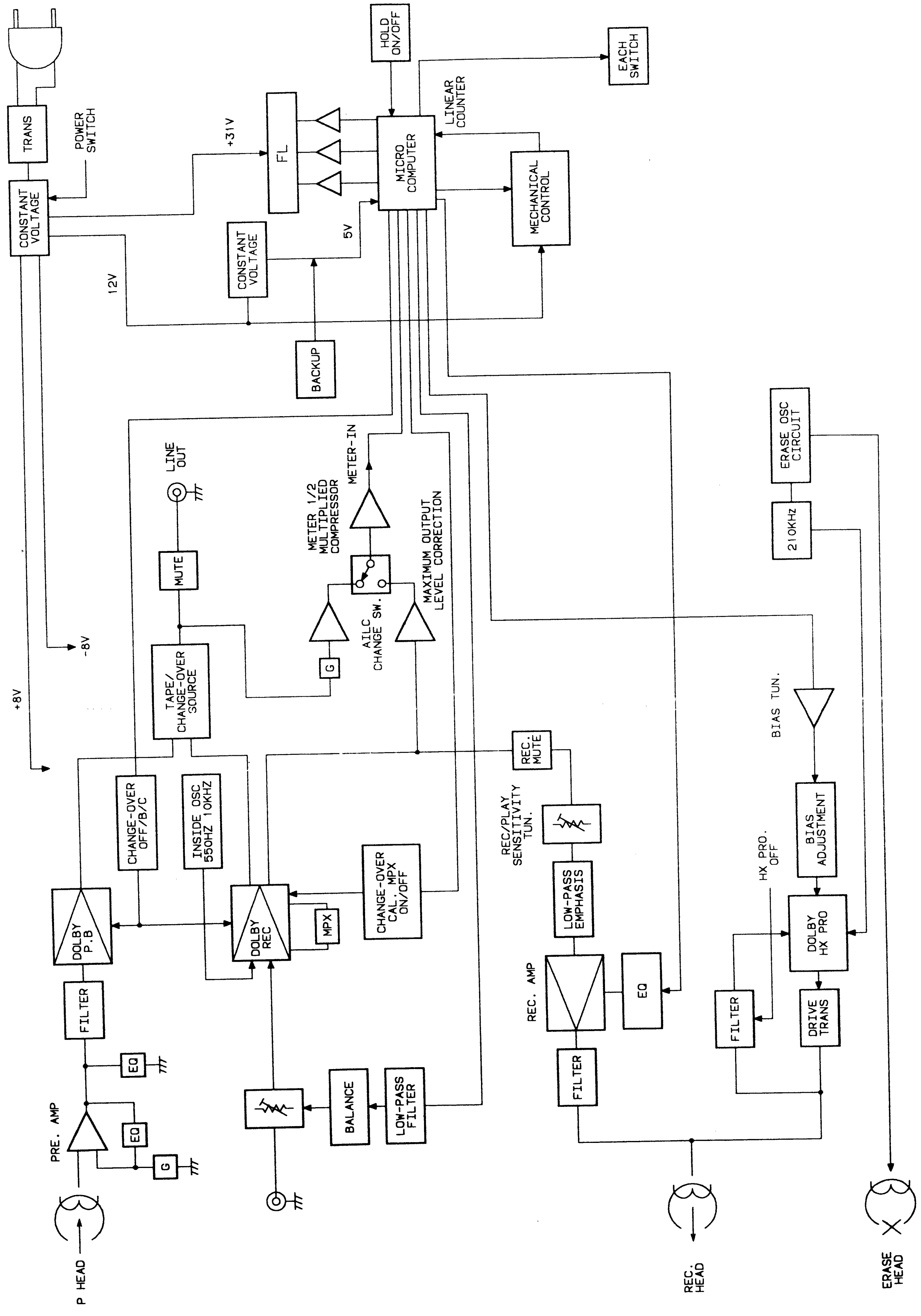
Signal-to-Noise Ratio (CCIR Weighted)	
Noise Reduction OFF/DIRECT	52 dB
Dolby* B NR	62 dB
Dolby* C NR	72 dB
Harmonic Distortion	
(at 1 kHz, 3rd H.D., Normal Tape)	0.6%
Channel Separation	40 dB
Signal Crosstalk	60 dB
Inputs (Sensitivity/Impedance)	
Line x 2	100 mV/50 kΩ
Outputs (Level at 0 VU/Impedance)	
Line x 2	500 mV/2.2 kΩ
Headphones	0 ~ 100 mV/8 Ω
GENERAL	
Power Requirements	AC 220V
(50 Hz)	26 Watts
Dimensions (WxHxD)	440 mm x 135 mm x 280 mm
Weight (approx.)	5.3 kg

* "Dolby" and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

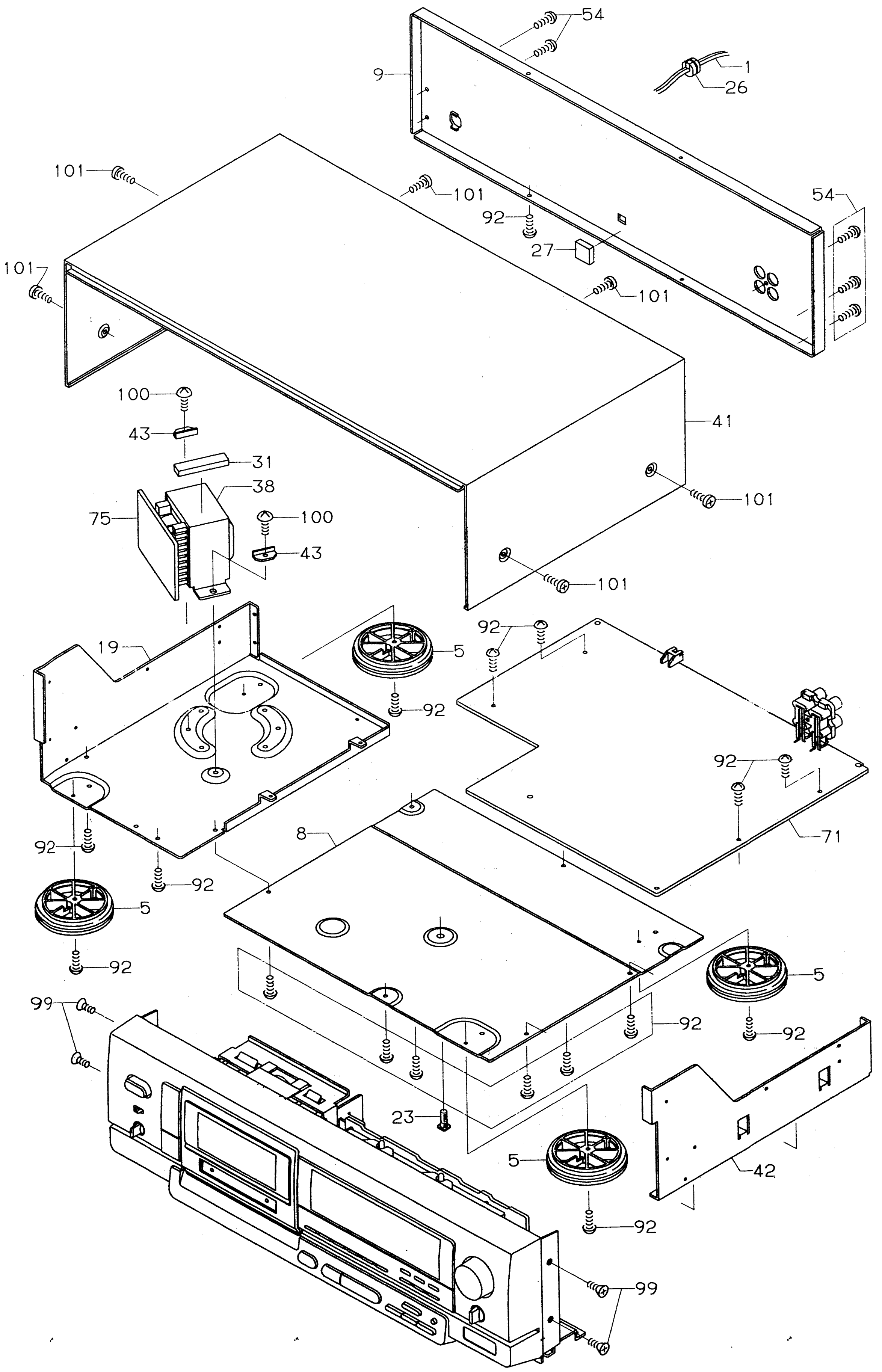
– Specifications and design are subject to change without notice. –

REFERENCE No. WM-570595

CIRCUIT BLOCK DIAGRAM


TRANS
POWER SWITCH
CONSTANT VOLTAGE
+31V
FL
HOLD ON/OFF
MICRO COMPUTER
LINEAR COUNTER
EACH SWITCH
MECHANICAL CONTROL
5V
CONSTANT VOLTAGE
12V
BACKUP
-8V
+8V
LINE OUT
MUTE
TAPE/ CHANGE-OVER SOURCE
METER-IN
METER 1/2 MULTIPLIED COMPRESSOR
AILC CHANGE SW.
MAXIMUM OUTPUT LEVEL CORRECTION
G
CHANGE-OVER OFF/B/C
INSIDE OSC 550HZ 10KHZ
CHANGE-OVER CAL. MPX ON/OFF
DOLBY P.B
DOLBY REC
MPX
FILTER
EQ
EQ
G
PRE. AMP
P HEAD
BALANCE
LOW-PASS FILTER
REC. MUTE
REC/PLAY SENSITIVITY TUN.
LOW-PASS EMPHASIS
REC. AMP
EQ
FILTER
REC. HEAD
ERASE OSC CIRCUIT
210KHz
BIAS TUN.
BIAS ADJUSTMENT
HX PRO. OFF
DOLBY HX PRO
FILTER
DRIVE TRANS
ERASE HEAD

CABINET EXPLODED VIEW (1)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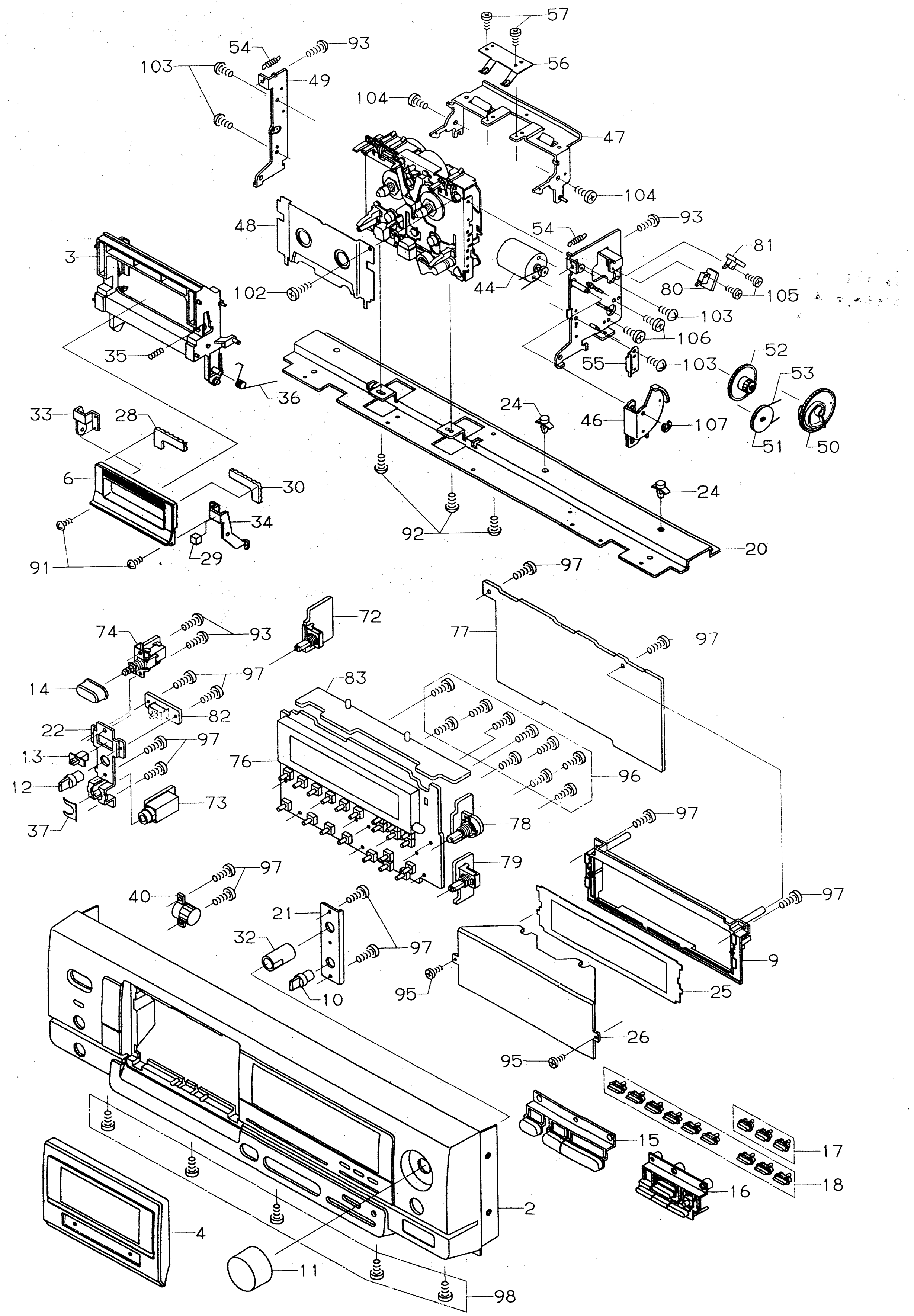
CABINET EXPLODED VIEW (2)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CABINET PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	620 209 8203	Inner Carton	1
	620 209 8210	Pad,Right	1
	620 209 8227	Pad,Left	1
	620 059 6596	Patching Sheet	1
	620 148 8012	Sheet Polyethylene	1
ACCESSORIES			
	620 209 8234	Assy,Poly Cover	1
	620 037 3500	RCA Cord 1000mm Black	1
	620 037 3517	RCA Cord 1000mm Gray	1
	620 057 8783	Bag Fan	1
	620 152 7452	Serial No. Sheet	1
	620 152 2624	Certificate Card	1
	620 209 8241	Instruction Manual	1
	620 190 0316	Connector 2P Assy	1
	620 209 3895	Label,Barcode	1
CABINET			
	620 125 8424	Wire Band	5
	620 152 7452	Serial No. Sheet	2
	620 209 6773	Assy,Connector-P,2P [CN13]	1
1	⚠ 620 023 7550	Power Cord	1
2	620 209 8043	Assy,Cabinet,Front	1
3	620 209 8098	Assy,Lid,Cassette	1
4	620 209 8111	Assy,Panel,Lid	1
5	620 198 6969	Assy,Foot	4
6	620 209 8081	Assy,Plate,Stabilizer	1
7	620 198 5344	Plate,Bottom	1
8	620 209 0139	Panel,Rear	1
9	620 208 4336	Panel,Meter	1
10	620 198 4873	Knob,Rotary,Volume	1
11	620 208 4176	Knob,Rotary,Volume	1
12	620 208 7481	Knob,Rotary	1
13	620 198 1506	Knob,Slide	1
14	620 203 6489	Button,Power	1
15	620 208 4213	Button,Play	1
16	620 208 4275	Button,REC	1
17	620 208 4282	Button,Push,A	3
18	620 208 4299	Button,Push,B	9
19	620 198 1520	Chassis,Left	1
20	620 208 4343	Bracket-M,Front	1
21	620 208 4428	Bracket-M,Volume	1
22	620 208 4435	Bracket-M,Headphone	1
23	620 199 8924	Post,Support,PCB	1
24	620 209 7992	Post,Support,PCB	2
25	620 208 4459	Filter	1
26	620 210 2597	Filter,Clear	1
27	620 200 1678	Cushion,Rubber	1
28	620 209 8104	Cushion,Rubber,Right	1
29	620 210 1019	Cushion,Rubber	1
30	620 210 1880	Cushion,Rubber,Left	1
31	620 210 5505	Cushion,Rubber	1
32	620 209 0399	Holder,Knob	1
33	620 208 4398	Arm,Stabilizer,Left	1
34	620 208 4404	Arm,Stabilizer,Right	1
35	620 210 2955	Spring,Comp	1
36	620 208 9669	Spring,Tors,Lid	1
37	620 209 8791	Spring,Plate,Clip	1
38	⚠ 620 208 8488	Power Trans,SEV 25VA	1
39	620 053 2136	Bushing (Power Cord)	1
or	620 053 2129	Bushing (4N-4)	1
40	620 083 1789	Gear Eject Assy	1
41	620 185 6156	Cover Top	1
42	620 185 6675	Chassis Right	1
43	620 120 7514	Fix Trans	2
44	620 209 8166	Assy,Motor	1
45	620 209 8135	Assy,Bracket-M,Mecha,Right	1
46	620 209 8142	Assy,Arm,Lid	1
47	620 209 8159	Assy,Arm,Lock	1
48	620 208 4442	Cover,Mecha	1
49	620 208 4374	Bracket-M,Mecha,Left	1
50	620 208 4305	Gear,Cam	1
51	620 208 4329	Gear,Pulley	1
52	620 208 4312	Idler	1
53	620 208 9683	Belt,Square	1
54	620 209 8197	Spring,Tens	2
55	620 208 8518	Spring,Plate,Stabilizer	1
56	620 208 8525	Spring,Plate,Cassette	1
57	620 122 6133	Screw	2
71	620 209 3420	Assy,PCB,Main	1
72	620 209 4380	Assy,PCB,Headphone,Circuit	1
73	620 209 4397	Assy,PCB,Headphone Jack	1
74	620 209 4403	Assy,PCB,Power Switch	1
75	620 209 4410	Assy,PCB,Power Trans	1
76	620 209 4427	Assy,PCB,Control	1
77	620 209 4434	Assy,PCB,Switch,FL	1
78	620 209 4441	Assy,PCB,Volume	1
79	620 209 4458	Assy,PCB,Balance	1
80	620 209 4465	Assy,PCB,Open Switch	1
81	620 209 4472	Assy,PCB,Close Switch	1
82	620 209 4489	Assy,PCB,TIM.Switch	1
83	620 209 4502	Assy,PCB,Lamp,Connect	1
91	411 018 2700	SCR PAN PCS 1.7X3	2
92	411 020 7700	SCR S-TPG BRZ 3X6	20
93	411 020 8004	SCR S-TPG BRZ 3X8	4
94	411 099 9803	SCR S-TPG BRZ 3X8	5
95	411 021 0809	SCR S-TPG BIN 2X6	2
96	411 021 1806	SCR S-TPG BIN 2.6X10	10
97	411 021 3107	SCR S-TPG BIN 2.6X8	12
98	411 021 5903	SCR S-TPG BIN 3X6	5
99	411 022 1904	SCR S-TPG FLT 2.6X6	4
100	411 024 8406	SCR S-TPG TRS 4X8	2
101	411 130 4507	SCR S-TPG BIN 3X8	6
102	411 021 1905	SCR S-TPG BIN 2.6X10	1
103	411 023 8209	SCR S-TPG PAN 3X5	4
104	412 040 2904	SPECIAL SCREW	2
105	411 030 7202	SCR BIN 2X6	2
106	411 001 8405	SCR BIN 3X3	2
107	411 015 9009	RING E 2	1

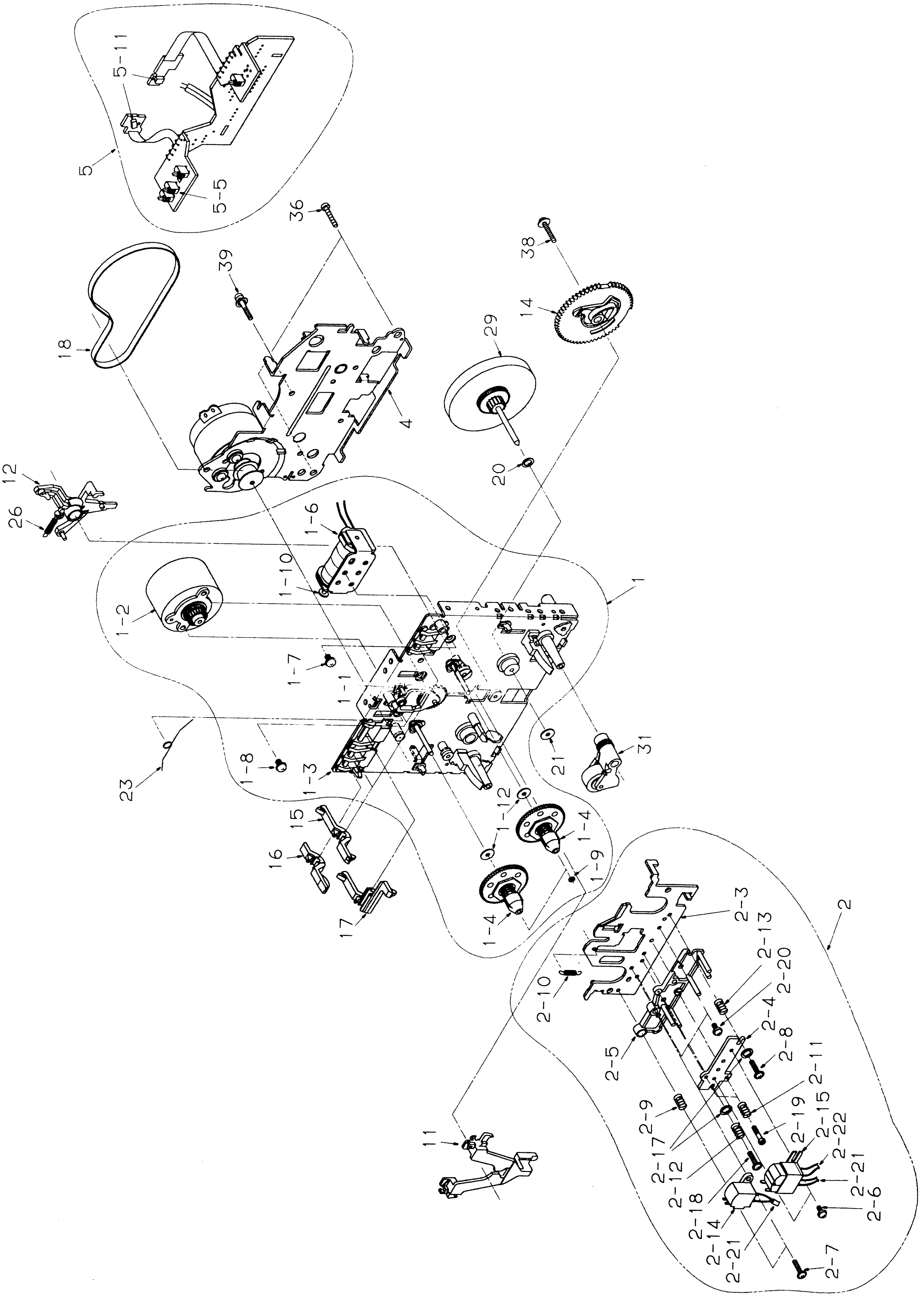
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

MECHANISM EXPLODED VIEW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MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MECHANISM			
1	620 209 7558	Chassis BLK	1
1-1	620 201 5248	Block Idler	1
1-2	620 209 7565	MTR Reel BLK	1
1-3	620 209 7572	Chassis Base BLK	1
1-4	620 209 7589	Reel Base BLK	2
1-6	620 209 7596	Solenoid BLK	1
1-7	620 209 7602	Screw 2.6X4ZN	1
1-8	620 209 7619	Screw 2.6X6ZN	2
1-9	620 201 5354	Washer	2
1-10	620 209 7626	Plunger	1
1-12	620 201 5361	Polyslider	2
2	620 209 7633	Plate HD BLK	1
2-3	620 209 7640	Head Base	1
2-4	620 209 7657	Plate Head Base	1
2-5	620 209 7664	3Head Spacer	1
2-6	620 209 7671	F Lock 2X3	2
2-7	620 209 7688	F Lock 2X9	2
2-8	620 209 7695	Screw 2X8ZN	1
2-9	620 209 7701	SP Azimuth	1
2-10	620 209 7718	Head Base SP	1
2-11	620 209 7725	Tilt SP	2
2-12	620 209 7732	Azimuth SP L	1
2-13	620 209 7749	Azimuth SP R	1
2-14	620 209 7756	Erase Head	1
2-15	620 209 7763	Head H5371	1
2-17	620 209 7770	Washer 2.0	2
2-18	620 209 7787	Screw BIN 2X12	1
2-19	620 209 7794	Tilt Screw	2
2-20	620 209 7800	Screw 2X3ZNT	2
2-21	620 209 7817	Wire Connector R/E	1
2-22	620 209 7824	Wire Connector PB	1
4	620 209 7831	MTR Main BLK	1
5	620 209 7848	PCB Control BLK	1
5-5	620 201 5491	Push Switch	4
5-11	620 209 7855	GP2S04B	2
11	620 209 7886	Hold Lever C	1
12	620 209 7893	Play Arm F	1
14	620 209 7909	CUM Gear F	1
15	620 209 7862	Interlock Lever	2
16	620 209 7916	Lever Pack	1
17	620 209 7923	Lever Metal	1
18	620 209 7930	Main Belt	1
20	620 201 5620	Polyslider	1
21	620 209 7947	Washer Oil CUT	1
23	620 209 7954	Hold SP	1
26	620 209 7961	Play Arm SP	1
29	620 209 7978	Assy Flywheel	1
31	620 209 7985	Assy Pinchroller	1
36	620 209 8005	Wave Screw 2.6X8	2
38	620 209 8012	Screw 2X15	1
39	620 209 8036	Screw 2.6X3.5	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CASSETTE DECK ADJUSTMENT

BEFORE ADJUSTMENT

If the tape surface which contacts the head, the capstan, the pinch roller, etc., is stained, it will cause unstable running of the tape, wow and flutter, imperfect recording and erasing, deterioration of tonal quality, and even tape jam around the capstan, etc. Occasionally clean each part as follows;

1. Cut off power.
2. Open the cassette lid.
3. Wipe the head, the capstan, and the pinch roller with a cotton swab. If they are excessively stained, clean them with a swab soaked in absolute alcohol or cleaning liquid available on the market.

MEASURING INSTRUMENTS REQUIRED

- Dualtrace Oscilloscope
- AC VTVM (AC voltmeter with high impedance)
- Dummy Load (47kΩ)
- Frequency Counter
- Signal Oscillator
- Test Tapes
  - 12.5kHz Test Tape (Example: A.BEX TCC-154) for Azimuth Adjustment
  - 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - 400Hz Test Tape (Example: TEAC MTT-150) for Playback sensitivity Adjustment
- Test Tape for Recording and Playback Operations
  - Metal Tape (Example: TDK AC 712)
  - CrO_2 Tape (Example: TDK AC 513)
  - Normal Tape (Example: TDK AC 223)

SWITCH POSITIONS

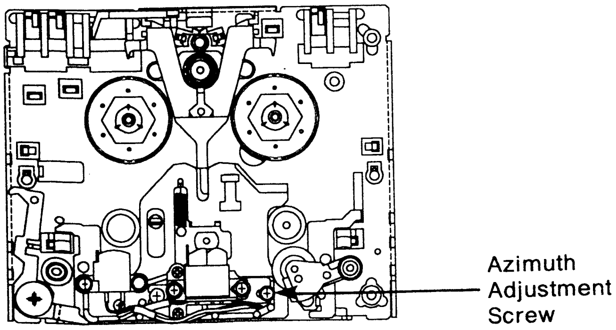
Unless especially indicated, set each switch as follows;

BALANCE	CENTER
INPUT LEVEL	MAX
MPX FILTER Switch	OFF
DOLBY NR Switch	OFF
HX PRO Switch	ON

TAPE SPEED ADJUSTMENT

1. Connect the dummy load (47kΩ) and the frequency counter to the LINE OUT terminal L.
2. Load a test tape (Example: TEAC MTT-111) and set it in the playback mode.
3. Adjust potentiometer in the capstan motor so that the output becomes 3000Hz±5Hz.

HEAD AZIMUTH ADJUSTMENT



1. Connect the dummy load (47kΩ) and the dualtrace oscilloscope to the LINE OUT terminals L and R.
2. Load a test tape (Example: A.BEX TCC-154) and set it in the playback mode.
3. Adjust the head azimuth adjustment screw, so that the waveforms become maximum on the oscilloscope and the right wave form overlaps with the left one.

PLAYBACK SENSITIVITY ADJUSTMENT

1. Connect the AC VTVM to the test terminal PB OUT (L) to GND and PB OUT (R) to GND.
2. Load a test tape (Example: TEAC MTT-150) and set it in the playback mode.
3. Adjust P101, so that the output of PB OUT (L) becomes 775mV.
4. Adjust P102, so that the output of PB OUT (R) becomes 775mV.

ERASE OSC ADJUSTMENT

1. Load a METAL tape (Example: TDK AC 712) and set it in the Rec. mode.
2. Connect Frequency Counter to the test terminal E to GND.
3. Adjust L301, so that the output frequency is 107kHz±2kHz.

HX PRO DRIVE TRANS ADJUSTMENT

1. Load a METAL tape (Example: TDK AC 712) and set it in the Rec. mode.
2. Connect AC VTVM to the test terminal DTS AJT (L) to GND and DTS AJT (R) to GND.
3. Adjust L101, so that the output voltage of DTS AJT (L) becomes minimum level.
4. Adjust L102, so that the output voltage of DTS ADT (R) becomes minimum level.

RECORD BIAS ADJUSTMENT

1. Connect the low frequency oscillator to the L side of the LINE IN terminal, and the dummy load (47kΩ) and AC VTVM to the L side of the LINE OUT terminal.
2. Load a METAL tape (Example: TDK AC 712) and set it in the recording mode.
3. Set the input level volume control to the maximum position and set the record balance volume control to the center position.
4. Feed the signals of 1kHz and 14kHz at 7mV (−43dBs) from the frequency generator into the unit. Then, record the signals on the tape.
5. Play back the recorded signals and adjust P107, so that the difference between output of the 1kHz and 14kHz signals reaches ±0.5dB.
6. Adjust P108 for the R side by following the same procedures as described for the L side.
7. Load a CrO_2 tape (Example: TDK AC 513) and set it in the recording mode.
8. Adjust P109 (L) and P110 (R) following the same procedures as for METAL tape adjustment.
9. Load a NORMAL tape (Example: TDK AC 223) and set it in the recording mode.
10. Adjust P111 (L) and P112 (R) following the same procedures as for METAL tape adjustment.

CASSETTE DECK ADJUSTMENT (Continued)

HX PRO OFF ADJUSTMENT

1. Set the HX PRO switch to ON position.
2. Connect the low frequency oscillator to the L side of the LINE IN terminal, and the dummy load (47kΩ) and AC VTVM to the L side of the LINE OUT terminal.
3. Load a NORMAL tape (Example: TDK AC 223) and set it in the recording mode.
4. Set the input level volume control to the maximum position and set the record balance volume control to the center position.
5. Feed the signals of 1kHz and 14kHz at 7mV (−43dBs) from the frequency generator into the unit. Then, record the signals on the tape.
6. Play back the recorded signals and adjust P113, so that the difference between output of the 1kHz and 4kHz signals reaches ±0.5dB.
7. Adjust P114 for the R side by following the same procedures as described for the L side.

RECORDING SENSITIVITY ADJUSTMENT

1. Connect the low frequency oscillator to the L side of the LINE IN terminal, and the dummy load (47kΩ) and AC VTVM to the L side of the LINE OUT terminal.
2. Load a NORMAL tape (Example: TDK AC 223) and set it in the record mode.
3. Feed a signal of 1kHz at 71mV (−23dBs) from the frequency generator into the unit. Then, record the signal on the tape.
4. Play back the recorded signal and adjust P103, so that the output becomes 71mV.
5. Adjust P104 for the R side by following the same procedures as described for the L side.

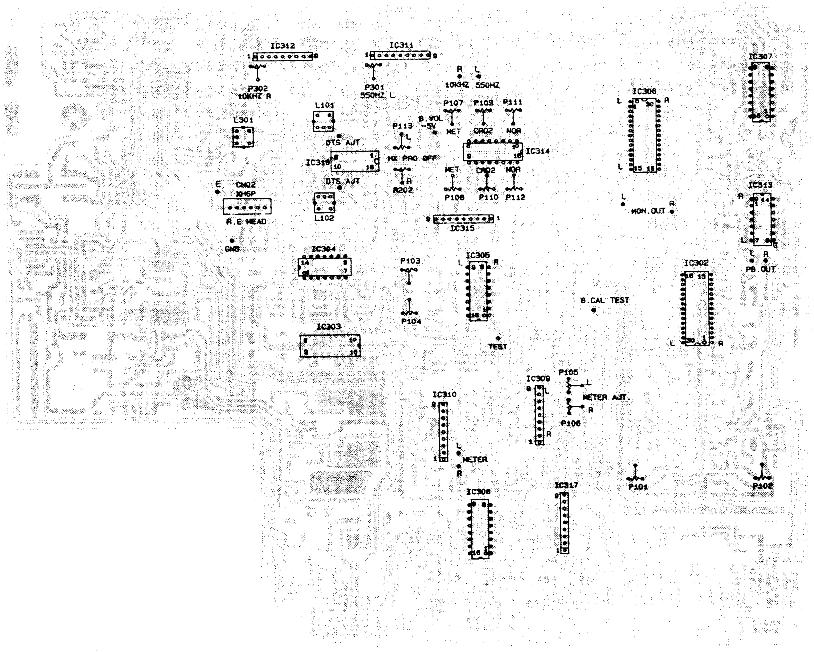
METER SENSITIVITY ADJUSTMENT

1. Connect the low frequency oscillator to the L side of the LINE IN terminal.
2. Feed a signal of 1kHz at 100mV (−20dBs) from the frequency generator into the unit. Then, adjust INPUT LEVEL volume so that test terminal MON. OUT voltage becomes 775mV.
3. Connect the AC VTVM to the test terminal METER (L) to GND and METER (R) to GND.
4. Adjust P105, so that the output of METER (L) becomes 2.38V.
5. Adjust P106, so that the output of METER (R) becomes 2.38V.

AUTO TUN. ADJUSTMENT

1. Connect the AC VTVM to the test terminal METER (L) to GND and METER (R) to GND.
2. Load a NORMAL tape (Example: TDK AC 223) and set it in the recording mode and set AUTO TUN. switch to ON position.
3. Adjust P301, so that the output of METER (L) becomes 3.055V.
4. Adjust P302, so that the output of METER (R) becomes 3.055V.

ADJUSTMENT POINT


IC312
IC311
P302
10KHZ R
P301
550HZ L
R L
10KHZ 550HZ
P107 P109 P111
B.VOL
-5V
MET CRO2 NOR
L301
L101
P113
L
DTS AJT
IC316
HX PRO OFF
R
R202
IC314
MET CRO2 NOR
P108 P110 P112
E
CN02
XH6P
R.E HEAD
GND
DTS AJT
L102
IC315
IC306
MON. OUT
IC307
IC313
PB. OUT
IC304
P103
P104
IC305
TEST
IC303
B.CAL TEST
IC302
IC309
P105
METER AJT.
P106
IC310
METER
IC308
IC317
P101
P102

HX PRO OFF ADJUSTMENT

1. Set the HX PRO switch to ON position.
2. Connect the low frequency oscillator to the L side of the LINE IN terminal, and the dummy load (47kΩ) and AC VTVM to the L side of the LINE OUT terminal.
3. Load a NORMAL tape (Example: TDK AC 223) and set it in the recording mode.
4. Set the input level volume control to the maximum position and set the record balance volume control to the center position.
5. Feed the signals of 1kHz and 14kHz at 7mV (−43dBs) from the frequency generator into the unit. Then, record the signals on the tape.
6. Play back the recorded signals and adjust P113, so that the difference between output of the 1kHz and 4kHz signals reaches ±0.5dB.
7. Adjust P114 for the R side by following the same procedures as described for the L side.

RECORDING SENSITIVITY ADJUSTMENT

1. Connect the low frequency oscillator to the L side of the LINE IN terminal, and the dummy load (47kΩ) and AC VTVM to the L side of the LINE OUT terminal.
2. Load a NORMAL tape (Example: TDK AC 223) and set it in the record mode.
3. Feed a signal of 1kHz at 71mV (−23dBs) from the frequency generator into the unit. Then, record the signal on the tape.
4. Play back the recorded signal and adjust P103, so that the output becomes 71mV.
5. Adjust P104 for the R side by following the same procedures as described for the L side.

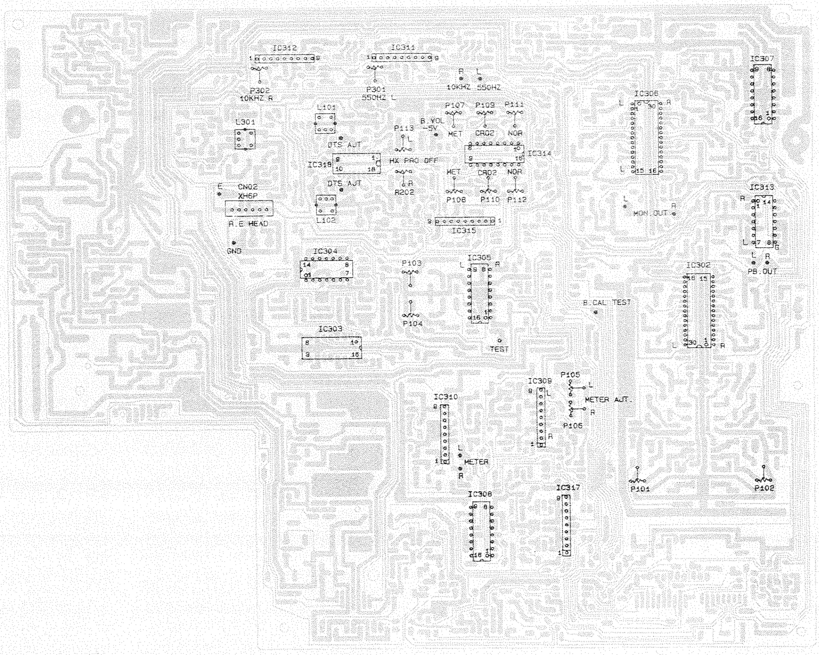
METER SENSITIVITY ADJUSTMENT

1. Connect the low frequency oscillator to the L side of the LINE IN terminal.
2. Feed a signal of 1kHz at 100mV (−20dBs) from the frequency generator into the unit. Then, adjust INPUT LEVEL volume so that test terminal MON. OUT voltage becomes 775mV.
3. Connect the AC VTVM to the test terminal METER (L) to GND and METER (R) to GND.
4. Adjust P105, so that the output of METER (L) becomes 2.38V.
5. Adjust P106, so that the output of METER (R) becomes 2.38V.

AUTO TUN. ADJUSTMENT

1. Connect the AC VTVM to the test terminal METER (L) to GND and METER (R) to GND.
2. Load a NORMAL tape (Example: TDK AC 223) and set it in the recording mode and set AUTO TUN. switch to ON position.
3. Adjust P301, so that the output of METER (L) becomes 3.055V.
4. Adjust P302, so that the output of METER (R) becomes 3.055V.

ADJUSTMENT POINT


IC312
P302
10KHZ R
IC311
P301
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L301
L101
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B.VOL
-5V
P113
L
MET
CR02
NOR
DTS AJT
IC318
HX PRO OFF
IC314
R
R202
MET
CR02
NOR
P108
P110
P112
DTS AJT
E
CN02
XH6P
R.E HEAD
L102
GND
IC315
IC307
IC306
L
R
IC313
MON.OUT
PB.OUT
IC304
P103
P104
IC305
TEST
IC303
IC302
B.CAL TEST
IC309
P105
METER AJT.
P106
IC310
METER
IC308
IC317
P101
P102

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,MAIN			
71	620 209 3420	Assy,PCB,Main	1
	⚠ 423 003 9809	FUSE 250V T0.63A	2
	⚠ 423 005 0507	FUSE 250V T1A	1
	411 020 8004	SCR S-TPG BRZ 3X8	4
	620 031 4763	Wire Wrap Terminal	15
	620 208 2936	Heat Sink	1
	620 053 7247	Plate Heat Sink	3
	620 209 9965	Shield,Plate	1
CN1	620 021 5930	Plug 4P	1
CN2	620 021 5954	Plug 6P	1
CN3	620 021 6548	Plug 2P	1
CN4	620 209 6520	Plug,7P	1
CN5	620 209 6537	Plug,9P	1
CN6	620 209 6544	Plug,10P	1
CN7	620 020 3753	Socket Jumper 7P	1
CN8	620 020 5801	Socket Jumper 5P	1
CN9	620 017 5036	Socket Jumper 5P	1
FC1	620 207 9158	Fuse Holder,Taping	6
LF101	620 026 4631	Bias Trap 105 Shield	1
LF102	620 026 4631	Bias Trap 105 Shield	1
LF103	620 197 3020	Filter,LC,Trap,210kHz,PRE	1
LF104	620 197 3020	Filter,LC,Trap,210kHz,PRE	1
LF105	620 197 3013	Filter,LC,Trap,210K,Bias	1
LF106	620 197 3013	Filter,LC,Trap,210K,Bias	1
LF107	620 209 3383	Filter,LC,MPX	1
LF108	620 209 3383	Filter,LC,MPX	1
L101	620 209 3390	Trans,OSC,HXPRO	1
L102	620 209 3390	Trans,OSC,HXPRO	1
L103	620 209 6599	Inductor,102J	1
L104	620 209 6599	Inductor,102J	1
L301	620 209 3376	Trans,OSC	1
L302	620 026 8202	Coil 15 MH J	1
PJ1	620 017 2455	Pin Jack 4P	1
or	620 198 7669	Jack,Pin,4P	1
or	620 195 1363	Jack,Pin,4P	1
or	620 182 8153	Pin Jack 4P	1
P101	620 182 6753	Potentiometer 330B	1
P102	620 182 6753	Potentiometer 330B	1
P103	620 006 1353	Potentiometer 100KB	1
P104	620 006 1353	Potentiometer 100KB	1
P105	620 006 1339	Potentiometer 33KB	1
P106	620 006 1339	Potentiometer 33KB	1
P107	620 006 1377	Potentiometer 10KB	1
P108	620 006 1377	Potentiometer 10KB	1
P109	620 006 1377	Potentiometer 10KB	1
P110	620 006 1377	Potentiometer 10KB	1
P111	620 006 1377	Potentiometer 10KB	1
P112	620 006 1377	Potentiometer 10KB	1
P113	620 006 1407	Potentiometer 2.2KB	1
P114	620 006 1407	Potentiometer 2.2KB	1
P301	620 006 1315	Semi Fixed 100B	1
P302	620 006 1315	Semi Fixed 100B	1
IC301	409 070 4800	IC NJM2068DD	1
IC302	409 232 6901	IC CXA1330S	1
IC303	409 146 5403	IC CXA1198AP	1
IC304	409 237 7101	IC UPD74HC03C	1
IC305	409 237 7002	IC M5283P	1
IC306	409 232 6901	IC CXA1330S	1
IC307	409 237 7002	IC M5283P	1
IC308	409 003 9407	IC BU4052B	1
or	409 051 2801	IC TC4052BP	1
IC309	409 198 9206	IC BA4558N	1
or	409 069 4705	IC M5218L-R	1
IC310	409 003 0404	IC BA6138	1
IC311	409 198 9206	IC BA4558N	1
or	409 069 4705	IC M5218L-R	1
IC312	409 198 9206	IC BA4558N	1
or	409 069 4705	IC M5218L-R	1
IC313	409 237 6906	IC M51551P	1
IC314	409 003 9407	IC BU4052B	1
or	409 051 2801	IC TC4052BP	1
IC315	409 198 9206	IC BA4558N	1
or	409 069 4705	IC M5218L-R	1
IC316	409 069 4705	IC M5218L-R	1
IC317	409 198 9206	IC BA4558N	1
or	409 069 4705	IC M5218L-R	1
IC318	409 183 8603	IC UPC1297CA	1
Q101	405 018 0200	TR 2SC3331-U-AA	1

Ref. No.	Part No.	Description	Q'ty
or	405 018 0309	TR 2SC3331-V-AA	1
Q102	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q103	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q104	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q105	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q106	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q107	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q108	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q109	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q110	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q111	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q112	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q113	405 018 2808	TR 2SC3402-AC	1
Q114	405 018 2808	TR 2SC3402-AC	1
Q115	405 018 2501	TR 2SC3399-AC	1
Q116	405 018 2501	TR 2SC3399-AC	1
Q301	405 018 2808	TR 2SC3402-AC	1
Q302	405 003 7900	TR 2SA1348-AC	1
Q303	405 018 2808	TR 2SC3402-AC	1
Q304	405 003 7900	TR 2SA1348-AC	1
Q305	405 018 2808	TR 2SC3402-AC	1
Q306	405 018 2808	TR 2SC3402-AC	1
Q307	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q308	405 003 7900	TR 2SA1348-AC	1
Q309	405 105 0403	TR 2SD2144S-V	1
or	405 105 0304	TR 2SD2144S-U	1
or	405 021 0204	TR 2SD1012-F-SPA-AC	1
or	405 021 0600	TR 2SD1012-G-SPA-AC	1
Q310	405 018 2808	TR 2SC3402-AC	1
Q311	405 003 7900	TR 2SA1348-AC	1
Q312	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q313	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q314	405 036 3504	TR 2SA1524-AC	1
Q315	405 018 2808	TR 2SC3402-AC	1
Q316	405 018 0200	TR 2SC3331-U-AA	1
Q317	405 018 0200	TR 2SC3331-U-AA	1
Q318	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q319	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
Q320	405 018 2808	TR 2SC3402-AC	1
Q321	405 018 0309	TR 2SC3331-V-AA	1
or	405 018 0200	TR 2SC3331-U-AA	1
Q322	405 018 0309	TR 2SC3331-V-AA	1
or	405 018 0200	TR 2SC3331-U-AA	1
Q323	405 018 0309	TR 2SC3331-V-AA	1
or	405 018 0200	TR 2SC3331-U-AA	1
Q324	405 032 8404	TR 2SC1846-S	1
or	405 032 8305	TR 2SC1846-R	1
Q325	405 104 9704	TR 2SA885-S	1
or	405 104 9605	TR 2SA885-R	1
Q326	405 004 5004	TR 2SA608-G-NP-AA	1
or	405 004 4502	TR 2SA608-F-NP-AA	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
Q327	405 004 5004	TR 2SA608-G-NP-AA	1
or	405 004 4502	TR 2SA608-F-NP-AA	1
Q328	405 095 1701	TR 2SD2061-F	1
or	405 095 1602	TR 2SD2061-E	1
Q329	405 018 0309	TR 2SC3331-V-AA	1
or	405 018 0200	TR 2SC3331-U-AA	1
Q330	405 018 0309	TR 2SC3331-V-AA	1
or	405 018 0200	TR 2SC3331-U-AA	1
Q331	405 017 2304	TR 2SC3116-T	1
or	405 041 7108	TR 2SC3116-S	1
Q332	405 105 0106	TR 2SC3708-S-AA	1
or	405 105 0205	TR 2SC3708-U-AA	1
Q333	405 105 0106	TR 2SC3708-S-AA	1
or	405 105 0205	TR 2SC3708-U-AA	1
Q334	405 018 2808	TR 2SC3402-AC	1
Q335	405 018 2808	TR 2SC3402-AC	1
Q336	405 018 2808	TR 2SC3402-AC	1
Q337	405 003 7702	TR 2SA1346-AC	1
Q338	405 003 7702	TR 2SA1346-AC	1
Q339	405 004 5004	TR 2SA608-G-NP-AA	1
or	405 004 4502	TR 2SA608-F-NP-AA	1
Q340	405 003 7900	TR 2SA1348-AC	1
Q341	405 018 2808	TR 2SC3402-AC	1
Q342	405 003 7702	TR 2SA1346-AC	1
Q343	405 018 0200	TR 2SC3331-U-AA	1
or	405 018 0309	TR 2SC3331-V-AA	1
D301	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D302	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D303	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D304	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D305	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D306	407 005 3805	DIODE DS442-BT	1
D307	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D308	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D309	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D310	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D311	407 012 4802	DIODE 1SS141	1
D312	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D313	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D314	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D315	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D316	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D317	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D318	407 005 8602	DIODE ERA15-02-V5	1
D319	407 005 8602	DIODE ERA15-02-V5	1
D320	407 005 8602	DIODE ERA15-02-V5	1
D321	407 005 8602	DIODE ERA15-02-V5	1
D322	407 005 8602	DIODE ERA15-02-V5	1
D323	407 005 8602	DIODE ERA15-02-V5	1
D324	407 005 8602	DIODE ERA15-02-V5	1
D325	407 005 8602	DIODE ERA15-02-V5	1
D326	407 005 8602	DIODE ERA15-02-V5	1
D327	407 005 8602	DIODE ERA15-02-V5	1
D328	407 136 3705	ZENER DIODE GZE5.6A-BT	1
D329	407 136 6508	ZENER DIODE GZE13B-BT	1
D330	407 050 2402	ZENER DIODE GZA33X-BT	1
D331	407 136 4603	ZENER DIODE GZE7.5A-BT	1
D332	407 136 3705	ZENER DIODE GZE5.6A-BT	1
D333	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D334	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D335	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1

Ref. No.	Part No.	Description	Q'ty
D336	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D337	407 136 0407	ZENER DIODE GZE2.0A-BT	1
D338	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D339	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D340	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
C103	403 086 4106	NP-ELECT 10U M 50V	1
C104	403 086 4106	NP-ELECT 10U M 50V	1
C105	403 068 9105	CERAMIC 100P K 50V	1
C106	403 068 9105	CERAMIC 100P K 50V	1
C107	403 058 9603	POLYESTER 0.018U J 50V	1
C108	403 058 9603	POLYESTER 0.018U J 50V	1
C109	403 003 8705	CERAMIC 0.039U K 25V	1
C110	403 003 8705	CERAMIC 0.039U K 25V	1
C111	403 059 6601	POLYESTER 0.022U K 50V	1
C112	403 059 6601	POLYESTER 0.022U K 50V	1
C113	403 071 5903	CERAMIC 220P K 50V	1
C114	403 071 5903	CERAMIC 220P K 50V	1
C115	403 059 3303	POLYESTER 2200P J 50V	1
C116	403 059 3303	POLYESTER 2200P J 50V	1
C117	403 059 3303	POLYESTER 2200P J 50V	1
C118	403 059 3303	POLYESTER 2200P J 50V	1
C119	403 212 5908	ELECT 0.56U J 50V	1
C120	403 212 5908	ELECT 0.56U J 50V	1
C121	403 048 5509	ELECT 0.33U M 50V	1
C122	403 048 5509	ELECT 0.33U M 50V	1
C123	403 051 2106	ELECT 4.7U M 50V	1
C124	403 051 2106	ELECT 4.7U M 50V	1
C125	403 050 1308	ELECT 2.2U M 50V	1
C126	403 050 1308	ELECT 2.2U M 50V	1
C127	403 059 5604	POLYESTER 0.022U J 50V	1
C128	403 059 5604	POLYESTER 0.022U J 50V	1
C129	403 059 3303	POLYESTER 2200P J 50V	1
C130	403 059 3303	POLYESTER 2200P J 50V	1
C131	403 059 3303	POLYESTER 2200P J 50V	1
C132	403 059 3303	POLYESTER 2200P J 50V	1
C133	403 212 5908	ELECT 0.56U J 50V	1
C134	403 212 5908	ELECT 0.56U J 50V	1
C135	403 048 5509	ELECT 0.33U M 50V	1
C136	403 048 5509	ELECT 0.33U M 50V	1
C137	403 051 2106	ELECT 4.7U M 50V	1
C138	403 051 2106	ELECT 4.7U M 50V	1
C139	403 049 5508	ELECT 10U M 50V	1
C140	403 049 5508	ELECT 10U M 50V	1
C141	403 071 5903	CERAMIC 220P K 50V	1
C142	403 071 5903	CERAMIC 220P K 50V	1
C143	403 073 6502	CERAMIC 470P K 50V	1
C144	403 073 6502	CERAMIC 470P K 50V	1
C145	403 070 8608	CERAMIC 1500P K 50V	1
C146	403 070 8608	CERAMIC 1500P K 50V	1
C147	403 070 4709	CERAMIC 1200P K 50V	1
C148	403 070 4709	CERAMIC 1200P K 50V	1
C149	403 072 7906	CERAMIC 330P K 50V	1
C150	403 072 7906	CERAMIC 330P K 50V	1
C151	403 049 1708	ELECT 1U M 50V	1
C152	403 049 1708	ELECT 1U M 50V	1
C153	403 050 1308	ELECT 2.2U M 50V	1
C154	403 050 1308	ELECT 2.2U M 50V	1
C155	403 072 5407	CERAMIC 2700P K 50V	1
C156	403 072 5407	CERAMIC 2700P K 50V	1
C157	403 073 6502	CERAMIC 470P K 50V	1
C158	403 073 6502	CERAMIC 470P K 50V	1
C159	403 082 2304	POLYPRO 560P J 100V	1
C160	403 082 2304	POLYPRO 560P J 100V	1
C161	403 057 0908	POLYESTER 0.01U K 50V	1
C162	403 057 0908	POLYESTER 0.01U K 50V	1
C163	403 003 2802	CERAMIC 0.022U K 25V	1
C164	403 003 2802	CERAMIC 0.022U K 25V	1
C165	403 004 0500	CERAMIC 0.047U K 25V	1
C166	403 004 0500	CERAMIC 0.047U K 25V	1
C167	403 212 6103	POLYPRO 470P J 250V	1
C168	403 212 6103	POLYPRO 470P J 250V	1
C169	403 212 6004	POLYPRO 100P J 250V	1
C170	403 212 6004	POLYPRO 100P J 250V	1
C171	403 051 2106	ELECT 4.7U M 50V	1
C172	403 051 2106	ELECT 4.7U M 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C173	403 181 3608	NP-ELECT	33U	M	25V	1
C174	403 181 3608	NP-ELECT	33U	M	25V	1
C175	403 049 1708	ELECT	1U	M	50V	1
C176	403 049 1708	ELECT	1U	M	50V	1
C177	403 072 2703	CERAMIC	0.022U	Z	50V	1
C178	403 072 2703	CERAMIC	0.022U	Z	50V	1
C301	403 039 7901	ELECT	100U	M	10V	1
C302	403 039 7901	ELECT	100U	M	10V	1
C303	403 039 7901	ELECT	100U	M	10V	1
C304	403 039 7901	ELECT	100U	M	10V	1
C305	403 042 3600	ELECT	100U	M	16V	1
C306	403 042 9107	ELECT	22U	M	16V	1
C307	403 042 9107	ELECT	22U	M	16V	1
C308	403 058 9603	POLYESTER	0.018U	J	50V	1
C309	403 058 9603	POLYESTER	0.018U	J	50V	1
C310	403 058 9603	POLYESTER	0.018U	J	50V	1
C311	403 056 7601	POLYESTER	1000P	J	50V	1
C312	403 056 7601	POLYESTER	1000P	J	50V	1
C313	403 056 7601	POLYESTER	1000P	J	50V	1
C314	403 024 1501	CERAMIC	39P	J	50V	1
C315	403 073 6502	CERAMIC	470P	K	50V	1
C316	403 061 8303	POLYESTER	4700P	K	50V	1
C317	403 061 8303	POLYESTER	4700P	K	50V	1
C318	403 063 0206	POLYESTER	6800P	K	50V	1
C319	403 216 0701	POLYESTER	0.022U	K	200V	1
C320	403 215 3802	POLYPRO	3900P	J	400V	1
C321	403 045 0606	ELECT	100U	M	25V	1
C322	403 049 1708	ELECT	1U	M	50V	1
C323	403 069 0705	CERAMIC	1000P	K	50V	1
C324	403 086 2706	NP-ELECT	1U	M	50V	1
C325	403 049 1708	ELECT	1U	M	50V	1
C326	403 050 7805	ELECT	3.3U	M	50V	1
C327	403 051 2106	ELECT	4.7U	M	50V	1
C328	403 069 8404	CERAMIC	0.01U	Z	50V	1
C329	403 069 8404	CERAMIC	0.01U	Z	50V	1
C330	403 069 8404	CERAMIC	0.01U	Z	50V	1
C331	403 069 8404	CERAMIC	0.01U	Z	50V	1
C332	403 046 0605	ELECT	2200U	M	25V	1
C333	403 046 0605	ELECT	2200U	M	25V	1
C334	403 042 3600	ELECT	100U	M	16V	1
C335	403 039 7901	ELECT	100U	M	10V	1
C336	403 039 7901	ELECT	100U	M	10V	1
C337	403 040 0403	ELECT	1000U	M	10V	1
C338	403 040 0403	ELECT	1000U	M	10V	1
C339	403 052 9609	ELECT	1000U	M	35V	1
C340	403 121 0704	ELECT	100U	M	63V	1
C341	403 121 0704	ELECT	100U	M	63V	1
C342	403 043 1100	ELECT	220U	M	16V	1
C343	403 052 8107	ELECT	100U	M	35V	1
C344	403 044 3004	ELECT	470U	M	16V	1
C345	403 045 0606	ELECT	100U	M	25V	1
C346	403 046 4603	ELECT	33U	M	25V	1
C347	403 049 5508	ELECT	10U	M	50V	1
C348	403 049 5508	ELECT	10U	M	50V	1
C350	403 074 2701	CERAMIC	0.047U	Z	50V	1
C351	403 074 2701	CERAMIC	0.047U	Z	50V	1
C352	403 049 5508	ELECT	10U	M	50V	1
C353	403 050 7805	ELECT	3.3U	M	50V	1
R101	401 015 3800	CARBON	18K	JA	1/4W	1
R102	401 015 3800	CARBON	18K	JA	1/4W	1
R103	401 012 4503	CARBON	100	JA	1/4W	1
R104	401 012 4503	CARBON	100	JA	1/4W	1
R105	401 022 3107	CARBON	6.8K	JA	1/4W	1
R106	401 022 3107	CARBON	6.8K	JA	1/4W	1
R107	401 016 8002	CARBON	2.4K	JA	1/4W	1
R108	401 016 8002	CARBON	2.4K	JA	1/4W	1
R109	401 018 3807	CARBON	3.3K	JA	1/4W	1
R110	401 018 3807	CARBON	3.3K	JA	1/4W	1
R111	401 024 7400	CARBON	10K	JA	1/6W	1
R112	401 024 7400	CARBON	10K	JA	1/6W	1
R113	401 014 5201	CARBON	15K	JA	1/4W	1
R114	401 014 5201	CARBON	15K	JA	1/4W	1
R115	401 016 8309	CARBON	24K	GA	1/4W	1
R116	401 016 8309	CARBON	24K	GA	1/4W	1
R117	401 021 1401	CARBON	560	GA	1/4W	1
R118	401 021 1401	CARBON	560	GA	1/4W	1
R119	401 012 5708	CARBON	1K	JA	1/4W	1
R120	401 017 2504	CARBON	27K	GA	1/4W	1
R121	401 020 2904	CARBON	47K	JA	1/4W	1
R122	401 020 2904	CARBON	47K	JA	1/4W	1
R123	401 012 5708	CARBON	1K	JA	1/4W	1
R124	401 012 5708	CARBON	1K	JA	1/4W	1
R125	401 012 5708	CARBON	1K	JA	1/4W	1
R126	401 012 5708	CARBON	1K	JA	1/4W	1
R127	401 027 2600	CARBON	5.6K	JA	1/6W	1
R128	401 027 2600	CARBON	5.6K	JA	1/6W	1
R129	401 027 2600	CARBON	5.6K	JA	1/6W	1
R130	401 027 2600	CARBON	5.6K	JA	1/6W	1
R131	401 020 2003	CARBON	4.7K	JA	1/4W	1
R132	401 020 2003	CARBON	4.7K	JA	1/4W	1
R133	401 025 6501	CARBON	20K	JA	1/6W	1
R134	401 025 6501	CARBON	20K	JA	1/6W	1
R135	401 025 8208	CARBON	22K	JA	1/6W	1
R136	401 025 8208	CARBON	22K	JA	1/6W	1
R137	401 012 5708	CARBON	1K	JA	1/4W	1
R138	401 012 5708	CARBON	1K	JA	1/4W	1
R139	401 020 2904	CARBON	47K	JA	1/4W	1
R140	401 020 2904	CARBON	47K	JA	1/4W	1
R141	401 018 3401	CARBON	3.3K	GA	1/4W	1
R142	401 018 3401	CARBON	3.3K	GA	1/4W	1
R143	401 017 1804	CARBON	2.7K	JA	1/4W	1
R144	401 017 1804	CARBON	2.7K	JA	1/4W	1
R145	401 016 3809	CARBON	2.2K	JA	1/4W	1
R146	401 016 3809	CARBON	2.2K	JA	1/4W	1
R147	401 018 3807	CARBON	3.3K	JA	1/4W	1
R148	401 018 3807	CARBON	3.3K	JA	1/4W	1
R149	401 022 3107	CARBON	6.8K	JA	1/4W	1
R150	401 022 3107	CARBON	6.8K	JA	1/4W	1
R151	401 016 8309	CARBON	24K	GA	1/4W	1
R152	401 016 8309	CARBON	24K	GA	1/4W	1
R153	401 021 1401	CARBON	560	GA	1/4W	1
R154	401 021 1401	CARBON	560	GA	1/4W	1
R155	401 020 2904	CARBON	47K	JA	1/4W	1
R156	401 020 2904	CARBON	47K	JA	1/4W	1
R157	401 017 1804	CARBON	2.7K	JA	1/4W	1
R158	401 017 1804	CARBON	2.7K	JA	1/4W	1
R159	401 024 7400	CARBON	10K	JA	1/6W	1
R160	401 024 7400	CARBON	10K	JA	1/6W	1
R161	401 012 7009	CARBON	10K	JA	1/4W	1
R162	401 012 7009	CARBON	10K	JA	1/4W	1
R163	401 018 3807	CARBON	3.3K	JA	1/4W	1
R164	401 018 3807	CARBON	3.3K	JA	1/4W	1
R165	401 012 4503	CARBON	100	JA	1/4W	1
R166	401 012 4503	CARBON	100	JA	1/4W	1
R167	401 014 4105	CARBON	1.5K	JA	1/4W	1
R168	401 014 4105	CARBON	1.5K	JA	1/4W	1
R169	401 018 4903	CARBON	33K	JA	1/4W	1
R170	401 018 4903	CARBON	33K	JA	1/4W	1
R171	401 026 4605	CARBON	33K	JA	1/6W	1
R172	401 026 4605	CARBON	33K	JA	1/6W	1
R173	401 024 7400	CARBON	10K	JA	1/6W	1
R174	401 024 7400	CARBON	10K	JA	1/6W	1
R175	401 024 7400	CARBON	10K	JA	1/6W	1
R176	401 024 7400	CARBON	10K	JA	1/6W	1
R177	401 026 3905	CARBON	330	JA	1/6W	1
R178	401 026 3905	CARBON	330	JA	1/6W	1
R179	401 026 4605	CARBON	33K	JA	1/6W	1
R180	401 026 4605	CARBON	33K	JA	1/6W	1
R181	401 019 1901	CARBON	3.9K	JA	1/4W	1
R182	401 019 1901	CARBON	3.9K	JA	1/4W	1
R183	401 026 4308	CARBON	3.3K	JA	1/6W	1
R184	401 026 4308	CARBON	3.3K	JA	1/6W	1
R185	401 027 0309	CARBON	47K	JA	1/6W	1
R186	401 027 0309	CARBON	47K	JA	1/6W	1
R187	401 027 5205	CARBON	680	JA	1/6W	1
R188	401 027 5205	CARBON	680	JA	1/6W	1
R189	401 026 4902	CARBON	330K	JA	1/6W	1
R190	401 026 4902	CARBON	330K	JA	1/6W	1
R191	401 027 3003	CARBON	56K	JA	1/6W	1
R192	401 027 3003	CARBON	56K	JA	1/6W	1
R193	401 025 7102	CARBON	22	JA	1/6W	1
R194	401 025 7102	CARBON	22	JA	1/6W	1
R195	401 026 4902	CARBON	330K	JA	1/6W	1
R196	401 026 4902	CARBON	330K	JA	1/6W	1
R197	401 025 8208	CARBON	22K	JA	1/6W	1
R198	401 025 8208	CARBON	22K	JA	1/6W	1
R199	401 025 2305	CARBON	150K	JA	1/6W	1
R200	401 025 2305	CARBON	150K	JA	1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R201	401 026 4605	CARBON	33K	JA	1/6W	1
R202	401 018 4903	CARBON	33K	JA	1/4W	1
R203	401 026 9600	CARBON	470	JA	1/6W	1
R204	401 026 9600	CARBON	470	JA	1/6W	1
R205	401 026 7002	CARBON	3.9K	JA	1/6W	1
R206	401 026 7002	CARBON	3.9K	JA	1/6W	1
R207	401 025 1902	CARBON	15K	JA	1/6W	1
R208	401 025 1902	CARBON	15K	JA	1/6W	1
R209	401 025 8208	CARBON	22K	JA	1/6W	1
R210	401 025 8208	CARBON	22K	JA	1/6W	1
R211	401 017 2504	CARBON	27K	GA	1/4W	1
R212	401 012 5708	CARBON	1K	JA	1/4W	1
R213	401 015 4708	CARBON	180K	JA	1/4W	1
R214	401 015 4708	CARBON	180K	JA	1/4W	1
R215	401 024 7707	CARBON	100K	JA	1/6W	1
R216	401 024 7707	CARBON	100K	JA	1/6W	1
R217	401 024 7707	CARBON	100K	JA	1/6W	1
R218	401 024 7707	CARBON	100K	JA	1/6W	1
R219	401 024 8001	CARBON	1M	JA	1/6W	1
R220	401 024 8001	CARBON	1M	JA	1/6W	1
R221	401 024 7707	CARBON	100K	JA	1/6W	1
R222	401 024 7707	CARBON	100K	JA	1/6W	1
R301	402 039 3500	FUSIBLE RES	22	JA	1/4W	1
R302	402 039 3500	FUSIBLE RES	22	JA	1/4W	1
R303	402 039 3203	FUSIBLE RES	33	JA	1/4W	1
R304	402 039 3500	FUSIBLE RES	22	JA	1/4W	1
R305	401 027 0309	CARBON	47K	JA	1/6W	1
R306	401 027 5205	CARBON	680	JA	1/6W	1
R307	401 024 7400	CARBON	10K	JA	1/6W	1
R308	401 024 7707	CARBON	100K	JA	1/6W	1
R309	401 016 8309	CARBON	24K	GA	1/4W	1
R310	401 026 9907	CARBON	4.7K	JA	1/6W	1
R311	401 024 7004	CARBON	1K	JA	1/6W	1
R312	401 024 7400	CARBON	10K	JA	1/6W	1
R313	401 024 7004	CARBON	1K	JA	1/6W	1
R314	401 024 7400	CARBON	10K	JA	1/6W	1
R315	401 026 9907	CARBON	4.7K	JA	1/6W	1
R316	401 024 7400	CARBON	10K	JA	1/6W	1
R317	401 024 7400	CARBON	10K	JA	1/6W	1
R318	401 024 7400	CARBON	10K	JA	1/6W	1
R319	401 025 1803	CARBON	15K	GA	1/6W	1
R320	401 014 4808	CARBON	15K	GA	1/4W	1
R321	401 014 8806	CARBON	16K	GA	1/4W	1
R322	401 024 7400	CARBON	10K	JA	1/6W	1
R323	401 026 7002	CARBON	3.9K	JA	1/6W	1
R324	401 026 7002	CARBON	3.9K	JA	1/6W	1
R325	401 024 7400	CARBON	10K	JA	1/6W	1
R326	401 024 7400	CARBON	10K	JA	1/6W	1
R327	401 025 1803	CARBON	15K	GA	1/6W	1
R328	401 014 4808	CARBON	15K	GA	1/4W	1
R329	401 014 8806	CARBON	16K	GA	1/4W	1
R330	401 016 2604	CARBON	220	JA	1/4W	1
R331	401 024 7004	CARBON	1K	JA	1/6W	1
R332	401 025 7805	CARBON	2.2K	JA	1/6W	1
R333	401 027 5908	CARBON	68K	JA	1/6W	1
R334	401 012 5708	CARBON	1K	JA	1/4W	1
R335	401 025 7805	CARBON	2.2K	JA	1/6W	1
R336	401 024 7400	CARBON	10K	JA	1/6W	1
R337	401 026 7002	CARBON	3.9K	JA	1/6W	1
R338	401 026 7002	CARBON	3.9K	JA	1/6W	1
R339	401 024 7400	CARBON	10K	JA	1/6W	1
R340	401 025 0004	CARBON	120K	JA	1/6W	1
R341	401 024 6700	CARBON	100	JA	1/6W	1
R342	401 024 7707	CARBON	100K	JA	1/6W	1
R343	401 024 6700	CARBON	100	JA	1/6W	1
R344	401 024 7004	CARBON	1K	JA	1/6W	1
R345	401 025 7805	CARBON	2.2K	JA	1/6W	1
R346	401 024 7400	CARBON	10K	JA	1/6W	1
R347	401 024 7400	CARBON	10K	JA	1/6W	1
R348	401 025 8208	CARBON	22K	JA	1/6W	1
R349	401 024 7400	CARBON	10K	JA	1/6W	1
R350	401 027 2600	CARBON	5.6K	JA	1/6W	1
R351	401 026 9907	CARBON	4.7K	JA	1/6W	1
R352	401 024 6700	CARBON	100	JA	1/6W	1
R353	401 024 8001	CARBON	1M	JA	1/6W	1
R354	401 024 8001	CARBON	1M	JA	1/6W	1
R355	401 024 7400	CARBON	10K	JA	1/6W	1
R356	401 012 6606	CARBON	10K	GA	1/4W	1
R357	401 024 9701	CARBON	12K	JA	1/6W	1
R358	401 026 1307	CARBON	27K	JA	1/6W	1
R359	401 024 8001	CARBON	1M	JA	1/6W	1
R360	401 024 7004	CARBON	1K	JA	1/6W	1
R361	401 024 7400	CARBON	10K	JA	1/6W	1
R362	401 024 7400	CARBON	10K	JA	1/6W	1
R363	401 024 6403	CARBON	10	JA	1/6W	1
R364	401 024 6403	CARBON	10	JA	1/6W	1
R365	401 026 7002	CARBON	3.9K	JA	1/6W	1
R366	402 060 3807	FUSIBLE RES	18	JA	1/4W	1
R367	401 016 3809	CARBON	2.2K	JA	1/4W	1
R368	401 016 3809	CARBON	2.2K	JA	1/4W	1
R369	401 016 3809	CARBON	2.2K	JA	1/4W	1
R370	401 016 3809	CARBON	2.2K	JA	1/4W	1
R371	401 012 5302	CARBON	1K	GA	1/4W	1
R372	401 017 1507	CARBON	2.7K	GA	1/4W	1
R373	401 014 8103	CARBON	160	GA	1/4W	1
R374	401 012 5302	CARBON	1K	GA	1/4W	1
R375	401 012 5302	CARBON	1K	GA	1/4W	1
R376	401 025 7805	CARBON	2.2K	JA	1/6W	1
R377	401 022 3107	CARBON	6.8K	JA	1/4W	1
R378	401 019 1901	CARBON	3.9K	JA	1/4W	1
R379	401 016 3809	CARBON	2.2K	JA	1/4W	1
R380	401 018 3807	CARBON	3.3K	JA	1/4W	1
R381	401 018 3807	CARBON	3.3K	JA	1/4W	1
R382	401 016 3809	CARBON	2.2K	JA	1/4W	1
R383	401 012 7009	CARBON	10K	JA	1/4W	1
R384	401 012 7009	CARBON	10K	JA	1/4W	1
R385	401 026 7408	CARBON	39K	JA	1/6W	1
R386	401 027 3003	CARBON	56K	JA	1/6W	1
R387	401 024 7400	CARBON	10K	JA	1/6W	1
R388	401 025 6709	CARBON	200K	JA	1/6W	1
R389	401 026 6104	CARBON	36K	JA	1/6W	1
R390	401 025 0004	CARBON	120K	JA	1/6W	1
R391	401 025 4903	CARBON	180K	JA	1/6W	1
R392	401 027 9005	CARBON	82K	JA	1/6W	1
R393	401 025 0004	CARBON	120K	JA	1/6W	1
R394	401 025 6709	CARBON	200K	JA	1/6W	1
R395	401 026 6104	CARBON	36K	JA	1/6W	1
R396	401 025 0004	CARBON	120K	JA	1/6W	1
R397	401 025 3500	CARBON	160K	JA	1/6W	1
R398	401 026 9006	CARBON	43K	JA	1/6W	1
R399	401 027 0309	CARBON	47K	JA	1/6W	1
R400	401 024 7707	CARBON	100K	JA	1/6W	1
R401	401 026 7408	CARBON	39K	JA	1/6W	1
R402	401 025 0004	CARBON	120K	JA	1/6W	1
R403	401 027 7407	CARBON	75K	JA	1/6W	1
R404	401 026 4605	CARBON	33K	JA	1/6W	1
R405	401 026 3202	CARBON	30K	JA	1/6W	1
R406	401 024 8704	CARBON	110K	JA	1/6W	1
R407	401 027 7407	CARBON	75K	JA	1/6W	1
R408	401 025 1902	CARBON	15K	JA	1/6W	1
R409	401 011 8908	CARBON	1	JA	1/4W	1
R410	401 018 3401	CARBON	3.3K	GA	1/4W	1
R411	401 021 3009	CARBON	5.6K	JA	1/4W	1
R412	401 025 8208	CARBON	22K	JA	1/6W	1
R413	401 027 5908	CARBON	68K	JA	1/6W	1

ASSY,PCB,HEADPHONE,CIRCUIT

Ref. No.	Part No.	Description				Q'ty
72	620 209 4380	Assy,PCB,Headphone,Circuit				1
CS1	620 200 2576	Socket,Holder,5P				1
CS2	620 201 0373	Socket,Holder,3P				1
VR601	620 209 3352	VR,Rotary,2X50KA				1
WR1	620 209 4786	Wire,5P,2.0				1
IC601	409 069 4705	IC M5218L-R				1
C601	403 048 3208	ELECT	0.22U	M	50V	1
C602	403 048 3208	ELECT	0.22U	M	50V	1
C603	403 023 1700	CERAMIC	33P	K	50V	1
C604	403 023 1700	CERAMIC	33P	K	50V	1
C605	403 073 1606	CERAMIC	0.033U	Z	50V	1
C606	403 073 1606	CERAMIC	0.033U	Z	50V	1
C607	403 039 7901	ELECT	100U	M	10V	1
C608	403 039 7901	ELECT	100U	M	10V	1
R601	401 026 1307	CARBON	27K	JA	1/6W	1
R602	401 026 1307	CARBON	27K	JA	1/6W	1
R603	401 025 6709	CARBON	200K	JA	1/6W	1
R604	401 025 6709	CARBON	200K	JA	1/6W	1
R605	401 027 5007	CARBON	68	JA	1/6W	1
R606	401 027 5007	CARBON	68	JA	1/6W	1
R607	401 027 5007	CARBON	68	JA	1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R608	401 027 5007	CARBON 68 JA 1/6W	1

ASSY,PCB,HEADPHONE JACK

Ref. No.	Part No.	Description	Q'ty
73	620 209 4397	Assy,PCB,Headphone Jack	1
CS2	620 201 0373	Socket,Holder,3P	1
JK1	620 209 3406	Jack,H/P,6.3D,Gold	1
WR2	620 209 4779	Wire,3P,2.0	1

ASSY,PCB,POWER SWITCH

Ref. No.	Part No.	Description	Q'ty
74	620 209 4403	Assy,PCB,Power Switch	1
CS3	620 200 2637	Socket,Holder,5P	1
PSW1	620 015 3546	Push Switch 1 Key	1
WR4	620 209 4762	Wire,5P,2.5	1

ASSY,PCB,POWER TRANS

Ref. No.	Part No.	Description	Q'ty
75	620 209 4410	Assy,PCB,Power Trans	1
CS4	620 205 5114	Socket,Holder,7P	1
EC1	620 022 2587	EC Terminal 1P	2
WR3	620 209 4755	Wire,7P,2.5	1

ASSY,PCB,CONTROL

Ref. No.	Part No.	Description	Q'ty
76	620 209 4427	Assy,PCB,Control	1
	620 031 4763	Wire Wrap Terminal	9
CN4	620 209 6551	Socket,7P	1
CN5	620 209 6568	Socket,9P	1
CN6	620 209 6575	Socket,10P	1
CN11	620 021 8597	Plug 4P	1
CN12	620 021 8306	Plug 2P	1
CN13	620 021 1970	Plug 2P	1
CON14	620 209 4724	Assy,Connector-P,7P	1
CON15	620 209 4731	Assy,Connector-P,5P	1
CON16	620 209 4694	Assy,Connector-P,6P	1
CO501	620 007 3424	FARC4LA-08000	1
CS00	620 202 9115	Socket,Holder,8P	4
RA501	620 191 8106	Resistor 5X22K	1
IC501	410 110 1604	IC M37450E8FP 9070	1
IC502	409 085 7100	IC LB1291	1
IC503	409 085 7100	IC LB1291	1
IC504	409 085 7100	IC LB1291	1
IC505	409 114 4803	IC LB1641	1
IC506	409 108 6004	IC NJM431L	1
IC507	409 108 6004	IC NJM431L	1
Q501	405 018 2808	TR 2SC3402-AC	1
Q502	405 019 2807	TR 2SC536-F-SPA-AC	1
or	405 019 3903	TR 2SC536-G-SPA-AC	1
Q503	405 019 2807	TR 2SC536-F-SPA-AC	1
or	405 019 3903	TR 2SC536-G-SPA-AC	1
Q504	405 018 2501	TR 2SC3399-AC	1
Q505	405 018 0200	TR 2SC3331-U-AA	1
Q506	405 004 5103	TR 2SA608-G-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q507	405 019 3903	TR 2SC536-G-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q508	405 019 3903	TR 2SC536-G-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q509	405 105 0601	TR 2SD734-G-AA	1
or	405 105 0502	TR 2SD734-F-AA	1
Q511	405 004 5103	TR 2SA608-G-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q513	405 105 0007	TR 2SB698-G-AA	1
or	405 104 9902	TR 2SB698-F-AA	1
Q514	405 105 0007	TR 2SB698-G-AA	1
or	405 104 9902	TR 2SB698-F-AA	1
Q515	405 105 0601	TR 2SD734-G-AA	1
or	405 105 0502	TR 2SD734-F-AA	1
Q516	405 105 0601	TR 2SD734-G-AA	1
or	405 105 0502	TR 2SD734-F-AA	1
Q517	405 018 2808	TR 2SC3402-AC	1
Q518	405 105 0601	TR 2SD734-G-AA	1
or	405 105 0502	TR 2SD734-F-AA	1
Q519	405 105 0601	TR 2SD734-G-AA	1
or	405 105 0502	TR 2SD734-F-AA	1
Q520	405 018 2808	TR 2SC3402-AC	1
Q521	405 018 2808	TR 2SC3402-AC	1
Q522	405 003 7702	TR 2SA1346-AC	1
D504	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D506	407 136 4306	ZENER DIODE GZE6.8A-BT	1
D507	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D508	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D509	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D510	407 136 2807	ZENER DIODE GZE4.3A-BT	1
D511	407 136 4603	ZENER DIODE GZE7.5A-BT	1
D512	407 005 8602	DIODE ERA15-02-V5	1
D513	407 005 1306	DIODE DS135C	1
D514	407 008 0405	DIODE GMB01-BT	1
or	407 061 2200	DIODE 1SS254-TA	1
D516	407 136 3804	ZENER DIODE GZE5.6B-BT	1
C501	403 044 0300	ELECT 47U M 16V	1
C502	403 072 9603	CERAMIC 3300P K 50V	1
C503	403 057 0908	POLYESTER 0.01U K 50V	1
C504	404 032 2207	ELECT 2200U M 10V	1
or	404 039 4303	ELECT 2200U M 10V	1
C505	403 041 5704	ELECT 470U M 10V	1
C507	403 039 7901	ELECT 100U M 10V	1
C508	403 040 2704	ELECT 22U M 10V	1
C509	403 040 2704	ELECT 22U M 10V	1
C510	403 044 0300	ELECT 47U M 16V	1
C512	403 069 8404	CERAMIC 0.01U Z 50V	1
C513	403 002 3602	CERAMIC 0.1U K 25V	1
C514	403 074 2701	CERAMIC 0.047U Z 50V	1
C516	403 048 5509	ELECT 0.33U M 50V	1
C518	403 048 3208	ELECT 0.22U M 50V	1
R501	401 026 9600	CARBON 470 JA 1/6W	1
R502	401 026 9600	CARBON 470 JA 1/6W	1
R503	401 025 8208	CARBON 22K JA 1/6W	1
R504	401 025 8208	CARBON 22K JA 1/6W	1
R505	401 027 0309	CARBON 47K JA 1/6W	1
R506	401 027 0309	CARBON 47K JA 1/6W	1
R527	401 024 7400	CARBON 10K JA 1/6W	1
R528	401 025 1902	CARBON 15K JA 1/6W	1
R529	401 027 0309	CARBON 47K JA 1/6W	1
R530	401 024 7400	CARBON 10K JA 1/6W	1
R531	401 025 1902	CARBON 15K JA 1/6W	1
R532	401 024 8001	CARBON 1M JA 1/6W	1
R533	401 024 7004	CARBON 1K JA 1/6W	1
R534	401 025 7805	CARBON 2.2K JA 1/6W	1
R535	401 025 4200	CARBON 1.8K JA 1/6W	1
R536	401 026 9600	CARBON 470 JA 1/6W	1
R537	401 026 4308	CARBON 3.3K JA 1/6W	1
R538	401 025 7805	CARBON 2.2K JA 1/6W	1
R539	401 027 0309	CARBON 47K JA 1/6W	1
R540	401 025 0004	CARBON 120K JA 1/6W	1
R541	401 024 7004	CARBON 1K JA 1/6W	1
R542	401 025 0004	CARBON 120K JA 1/6W	1
R543	401 024 7004	CARBON 1K JA 1/6W	1
R544	401 026 4605	CARBON 33K JA 1/6W	1
R545	401 012 5708	CARBON 1K JA 1/4W	1
R546	401 027 6103	CARBON 680K JA 1/6W	1
R547	401 022 1905	CARBON 680 JA 1/4W	1
R548	401 083 8301	MT-FILM 1.2K FA 1/6W	1
R549	401 053 0403	MT-FILM 2K FA 1/6W	1
R550	401 024 7400	CARBON 10K JA 1/6W	1
R551	401 024 7707	CARBON 100K JA 1/6W	1
R552	402 032 7703	FUSIBLE RES 22 JA 1/2W	1
R553	401 025 7805	CARBON 2.2K JA 1/6W	1
R554	401 025 7805	CARBON 2.2K JA 1/6W	1
R555	401 026 4308	CARBON 3.3K JA 1/6W	1
R556	401 026 4308	CARBON 3.3K JA 1/6W	1
R557	401 027 0309	CARBON 47K JA 1/6W	1
R558	401 025 1605	CARBON 1.5K JA 1/6W	1
R559	402 059 7106	FUSIBLE RES 12 J- 1/2W	1
R560	402 059 7106	FUSIBLE RES 12 J- 1/2W	1
R561	401 027 5908	CARBON 68K JA 1/6W	1
R562	401 027 5908	CARBON 68K JA 1/6W	1
R563	401 025 7805	CARBON 2.2K JA 1/6W	1
R564	401 025 7805	CARBON 2.2K JA 1/6W	1
R565	401 027 5908	CARBON 68K JA 1/6W	1
R566	401 027 5908	CARBON 68K JA 1/6W	1
R567	401 020 2904	CARBON 47K JA 1/4W	1
R568	401 024 7400	CARBON 10K JA 1/6W	1
R571	401 024 7707	CARBON 100K JA 1/6W	1
R572	401 083 8301	MT-FILM 1.2K FA 1/6W	1
R573	401 083 8301	MT-FILM 1.2K FA 1/6W	1
R574	401 024 7004	CARBON 1K JA 1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,SWITCH,FL			
77	620 209 4434	Assy,PCB,Switch,FL	1
	620 209 8128	Cushion,Rubber	2
FLT1	620 209 3413	Fluorescent Tube	1
KBSW	620 202 6725	Switch,Tact,Taping (S501-S520)	20
or	620 197 4683	Switch,Tact (S501-S520)	20
R507	401 025 4200	CARBON 1.8K JA 1/6W	1
R508	401 025 4200	CARBON 1.8K JA 1/6W	1
R509	401 025 9809	CARBON 2.4K JA 1/6W	1
R510	401 025 9809	CARBON 2.4K JA 1/6W	1
R511	401 026 1000	CARBON 2.7K JA 1/6W	1
R512	401 026 1000	CARBON 2.7K JA 1/6W	1
R513	401 026 4308	CARBON 3.3K JA 1/6W	1
R514	401 026 4308	CARBON 3.3K JA 1/6W	1
R515	401 026 9907	CARBON 4.7K JA 1/6W	1
R516	401 026 9907	CARBON 4.7K JA 1/6W	1
R517	401 027 2600	CARBON 5.6K JA 1/6W	1
R518	401 027 2600	CARBON 5.6K JA 1/6W	1
R519	401 027 7209	CARBON 7.5K JA 1/6W	1
R520	401 027 7209	CARBON 7.5K JA 1/6W	1
R521	401 024 8605	CARBON 11K JA 1/6W	1
R522	401 024 8605	CARBON 11K JA 1/6W	1
R523	401 025 4606	CARBON 18K JA 1/6W	1
R524	401 025 4606	CARBON 18K JA 1/6W	1
R525	401 026 3202	CARBON 30K JA 1/6W	1
R526	401 026 3202	CARBON 30K JA 1/6W	1
ASSY,PCB,VOLUME			
78	620 209 4441	Assy,PCB,Volume	1
VS501	620 209 3345	Switch,Rotary Encoder	1
ASSY,PCB,BALANCE			
79	620 209 4458	Assy,PCB,Balance	1
VR301	620 209 3369	VR,Rotary,1X20KW	1
ASSY,PCB,OPEN SWITCH			
80	620 209 4465	Assy,PCB,Open Switch	1
CON11	620 209 4717	Assy,Connector-P,4P	1
SWO1	620 209 3314	Switch,Lever,1-1-2	1
ASSY,PCB,CLOSE SWITCH			
81	620 209 4472	Assy,PCB,Close Switch	1
SWC1	620 209 3314	Switch,Lever,1-1-2	1
ASSY,PCB,TIM.SWITCH			
82	620 209 4489	Assy,PCB,TIM.Switch	1
CON12	620 209 4670	Assy,Connector-P,2P	1
TSW1	620 205 2724	Switch,Slide,1-1-3	1
or	620 201 3206	Switch,Slide,1-1-3	1
R568	401 024 7400	CARBON 10K JA 1/6W	1
R569	401 025 4606	CARBON 18K JA 1/6W	1
ASSY,PCB,LAMP,CONNECT			
83	620 209 4502	Assy,PCB,Lamp,Connect	1
	620 202 9115	Socket,Holder,8P	4
	620 209 4793	Wire,8P,2.0	4
	620 209 4373	Lamp,12V,80MA [LMP1,2]	2

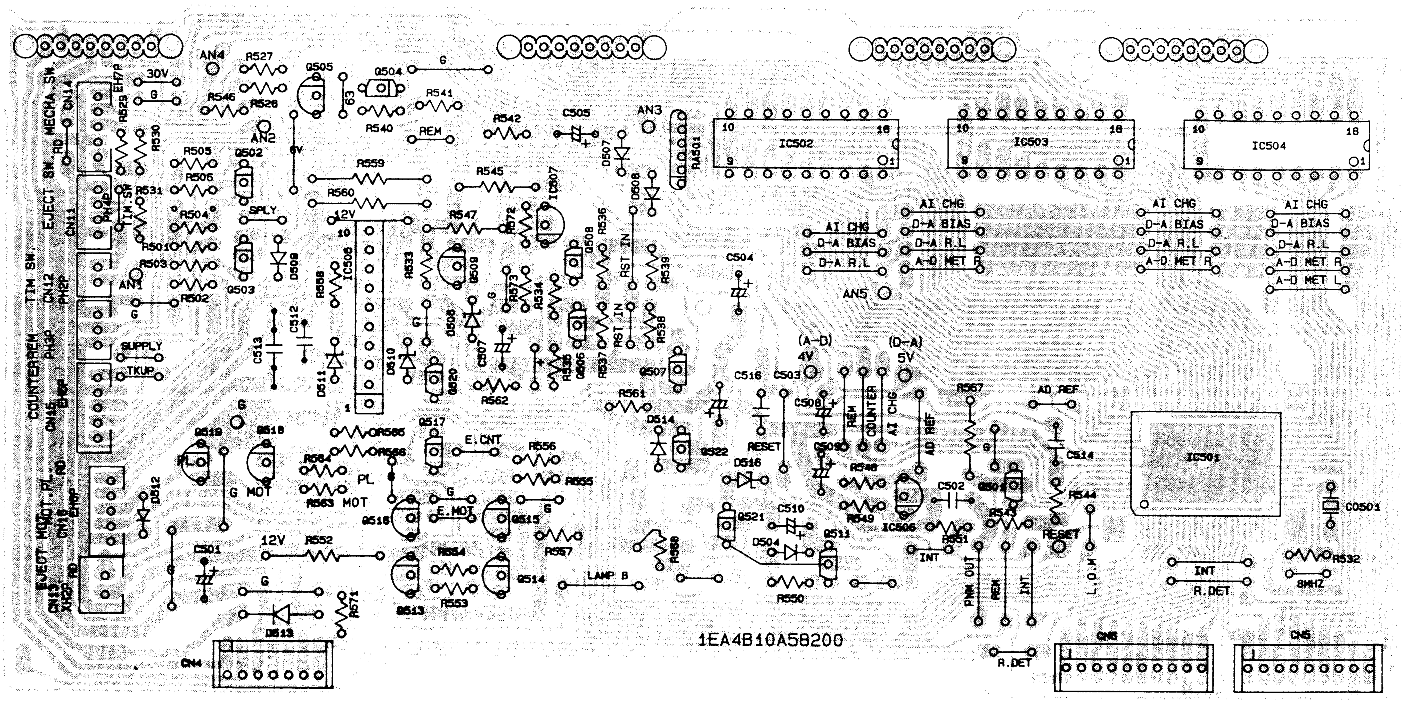
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CONTROL P.C.BOARD
(BOTTOM VIEW)

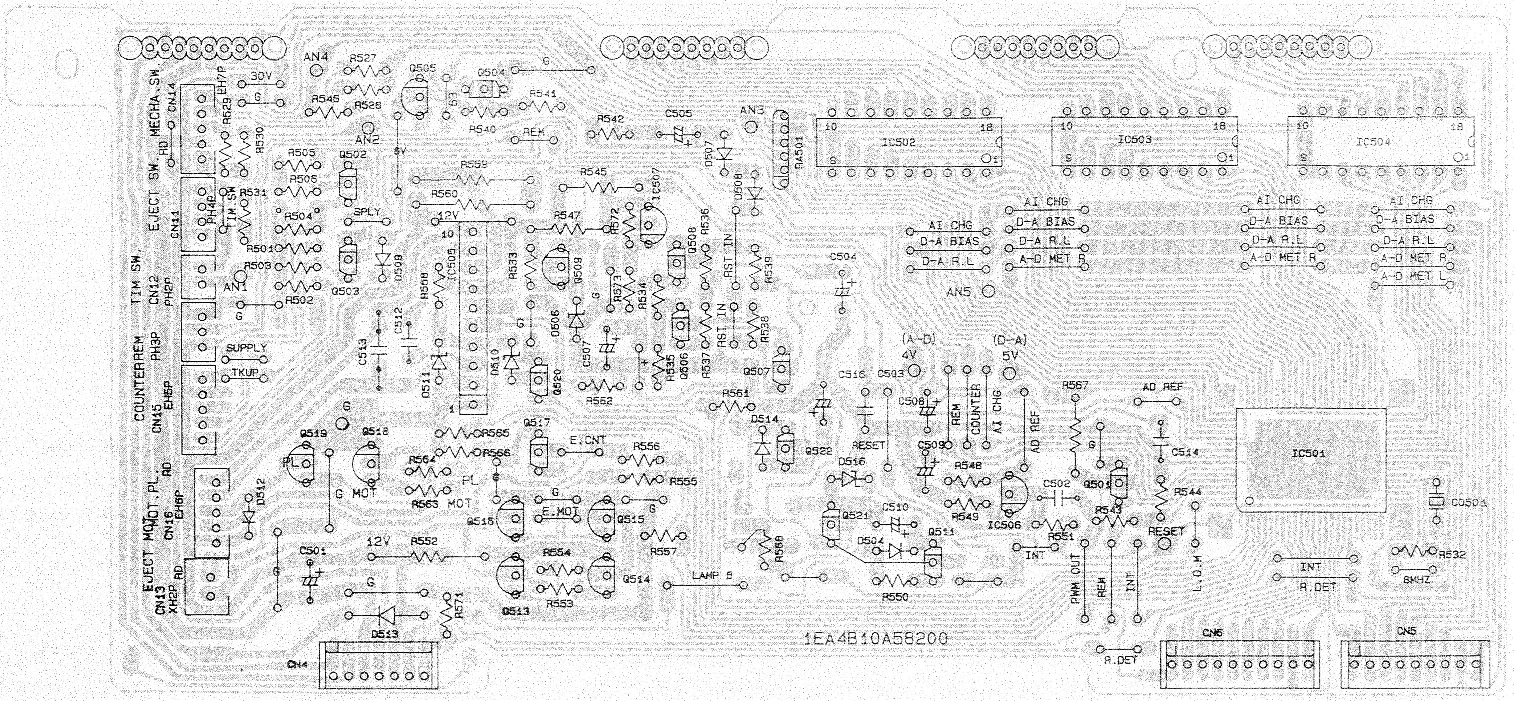


IC502
IC503
IC504
IC505
IC506
IC507
IC501
RA501
CN4
CN5
CN6
CN11
CN12
CN13
CN14
CN15
CN16
AN1
AN2
AN3
AN4
AN5
30V
12V
5V
4V
(A-D)
(D-A)
AI CHG
D-A BIAS
D-A R.L
A-D MET R
A-D MET L
REM
COUNTER
AD REF
RESET
INT
R.DET
8MHZ
CO501
E.CNT
E.MOT
PL
MOT
LAMP B
SUPPLY
TKUP
SPLY
TIM SW
EJECT SW
MECHA SW
COUNTER
REM
EJECT
MOT
PL
RST IN
PNM OUT
L.O.H
1EA4B10A58200

Voltage Table of Control P.C.Board

		IC PIN NUMBERS DC VOLTAGES																	
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC502	LB1291	1.4V	1.4V	2.1V	1.4V	0.7V	1.4V	1.4V	2.1V	0V	30.5V	12.8V	8.5V	8.5V	4.4V	8.5V	12.6V	8.5V	8.5V
IC503	LB1291	0V	1.4V	1.4V	2.1V	1.4V	0.7V	1.4V	1.4V	0V	30.5V	8.5V	8.5V	4.3V	8.5V	12.8V	8.5V	8.5V	0V
IC504	LB1291	0.6V	0.6V	0.7V	0.7V	0.6V	0.6V	0.7V	0V	0V	30.5V	0V	4.0V	4.0V	4.0V	4.1V	4.0V	4.0V	4.0V
IC505	LB1641	0V	0.5V	0.7V	7.1V	0V	0V	11.8V	11.8V	0.7V	–	–	–	–	–	–	–	–	–

CONTROL P.C.BOARD
(BOTTOM VIEW)

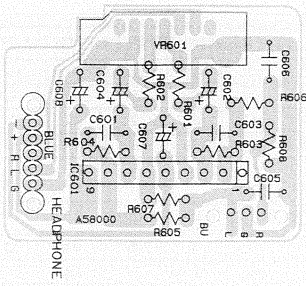


MECHA.SW.
EJECT SW.
TIM SW.
COUNTERREM
EJECT MOT.PL.
CN14
CN11
CN12
CN15
CN16
CN13
CN4
CN6
CN5
EH7P
PH4P
PH2P
PH3P
EH5P
EH6P
XH2P
30V
AN1
AN2
AN3
AN4
AN5
5V
12V
SPLY
SUPPLY
TKUP
IC501
IC502
IC503
IC504
IC505
IC506
IC507
RA501
C0501
8MHZ
AI CHG
D-A BIAS
D-A R.L
A-D MET R
A-D MET L
(A-D)
4V
(D-A)
5V
AD REF
RESET
REM
COUNTER
INT
R.DET
PWM OUT
L.O.M
LAMP B
E.CNT
E.MOT
PL
MOT
1EA4B10A58200

Voltage Table of Control P.C.Board

		IC PIN NUMBERS DC VOLTAGES																	
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC502	LB1291	1.4V	1.4V	2.1V	1.4V	0.7V	1.4V	1.4V	2.1V	0V	30.5V	12.8V	8.5V	8.5V	4.4V	8.5V	12.6V	8.5V	8.5V
IC503	LB1291	0V	1.4V	1.4V	2.1V	1.4V	0.7V	1.4V	1.4V	0V	30.5V	8.5V	8.5V	4.3V	8.5V	12.8V	8.5V	8.5V	0V
IC504	LB1291	0.6V	0.6V	0.7V	0.7V	0.6V	0.6V	0.7V	0V	0V	30.5V	0V	4.0V	4.0V	4.0V	4.1V	4.0V	4.0V	4.0V
IC505	LB1641	0V	0.5V	0.7V	7.1V	0V	0V	11.8V	11.8V	0.7V	–	–	–	–	–	–	–	–	–

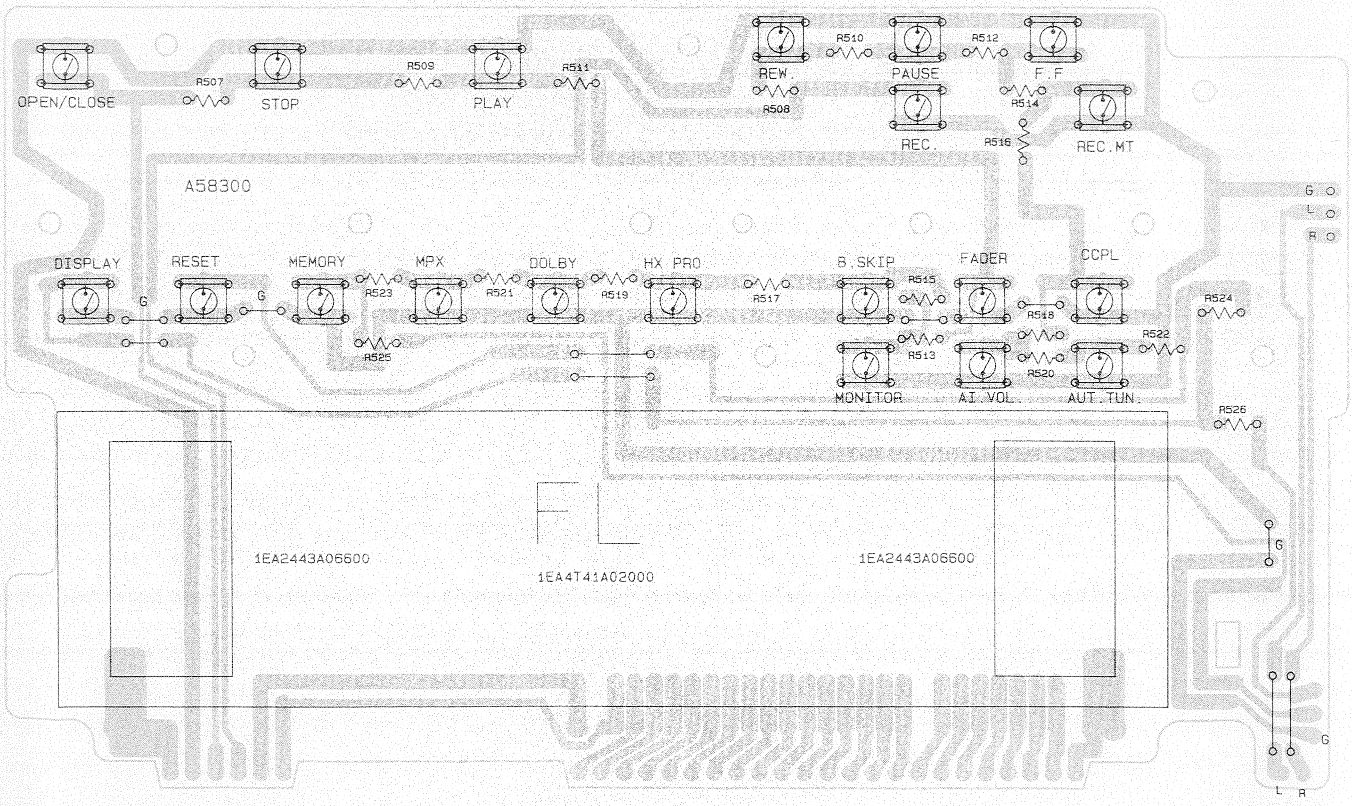
HEADPHONE CIRCUIT P.C.BOARD
(BOTTOM VIEW)


VR601
C606
C608
C604
R602
R601
C602
R606
C601
C607
C603
R604
R603
R608
BLUE
IC601
9
1
C605
R607
R605
A58000
BU
L
G
R
− + R L G
HEADPHONE

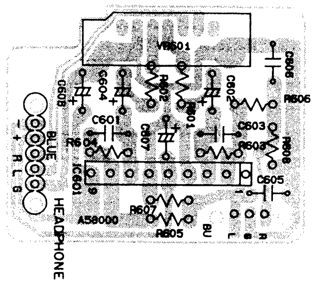
Voltage Table of Headphone Circuit P.C.Board

IC PIN NUMBERS DC VOLTAGES									
Ref. No.	DEVICE	1	2	3	4	5	6	7	8
IC601	M5218L	0V	0V	0V	−7.9V	0V	0V	0V	8.0V

SWITCH FL P.C.BOARD
(BOTTOM VIEW)


OPEN/CLOSE
R507
STOP
R509
PLAY
R511
REW.
R508
R510
PAUSE
R512
F.F
R514
REC.
R516
REC.MT
A58300
G
L
R
DISPLAY
RESET
MEMORY
MPX
DOLBY
HX PRO
B.SKIP
FADER
CCPL
G
G
R523
R521
R519
R517
R515
R518
R524
R525
R513
R520
R522
MONITOR
AI.VOL.
AUT.TUN.
R526
FL
1EA2443A06600
1EA4T41A02000
1EA2443A06600
G
G
L
R

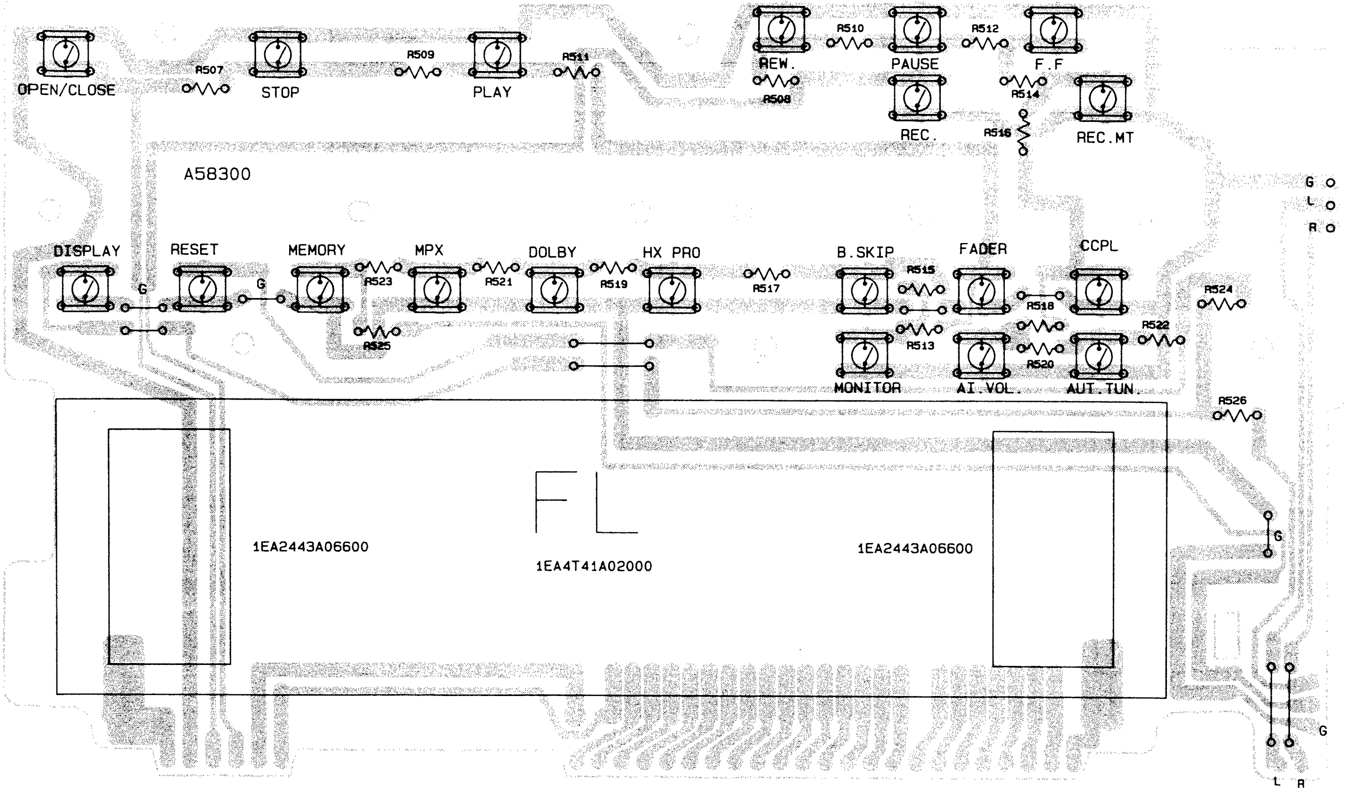
HEADPHONE CIRCUIT P.C.BOARD
(BOTTOM VIEW)


VR601
C606
C608
C604
R602
R601
C602
R606
C601
C607
C603
R604
R603
R608
BLUE
IC601
9
1
C605
R607
R605
A58000
HEADPHONE
− + R L G
BU L B R

Voltage Table of Headphone Circuit P.C.Board

IC PIN NUMBERS DC VOLTAGES									
Ref. No.	**DEVICE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
IC601	M5218L	0V	0V	0V	−7.9V	0V	0V	0V	8.0V

SWITCH FL P.C.BOARD
(BOTTOM VIEW)


OPEN/CLOSE
R507
STOP
R509
PLAY
R511
REW.
R508
R510
PAUSE
R512
F.F
REC.
R514
R516
REC.MT
A58300
G
L
R
DISPLAY
RESET
MEMORY
MPX
DOLBY
HX PRO
B.SKIP
FADER
CCPL
R523
R521
R519
R517
R515
R518
R524
R525
R513
R522
R520
MONITOR
AI.VOL.
AUT.TUN.
R526
FL
1EA2443A06600
1EA4T41A02000
1EA2443A06600
G
G
L R

Voltage Table of Main P.C.Board

IC PIN NUMBERS DC VOLTAGES									
Ref. No.	**DEVICE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
IC301	NJM2068DD	0.3V	0V	0V	−7.5V	0V	0V	0.3V	7.5V

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	**DEVICE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
IC302	CXA1330S	0V	0V	0V	0V	−7.5V	0V	0V	0V	0V	0V	−7.0V	−7.0V	0V	−6.2V	−7.5V	7.5V	0V	0V	−6.9V	−7.0V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		0V	0V	0V	0V	0V	−4.6V	0V	0V	0V	0V	–	–	–	–	–	–	–	–	–	–

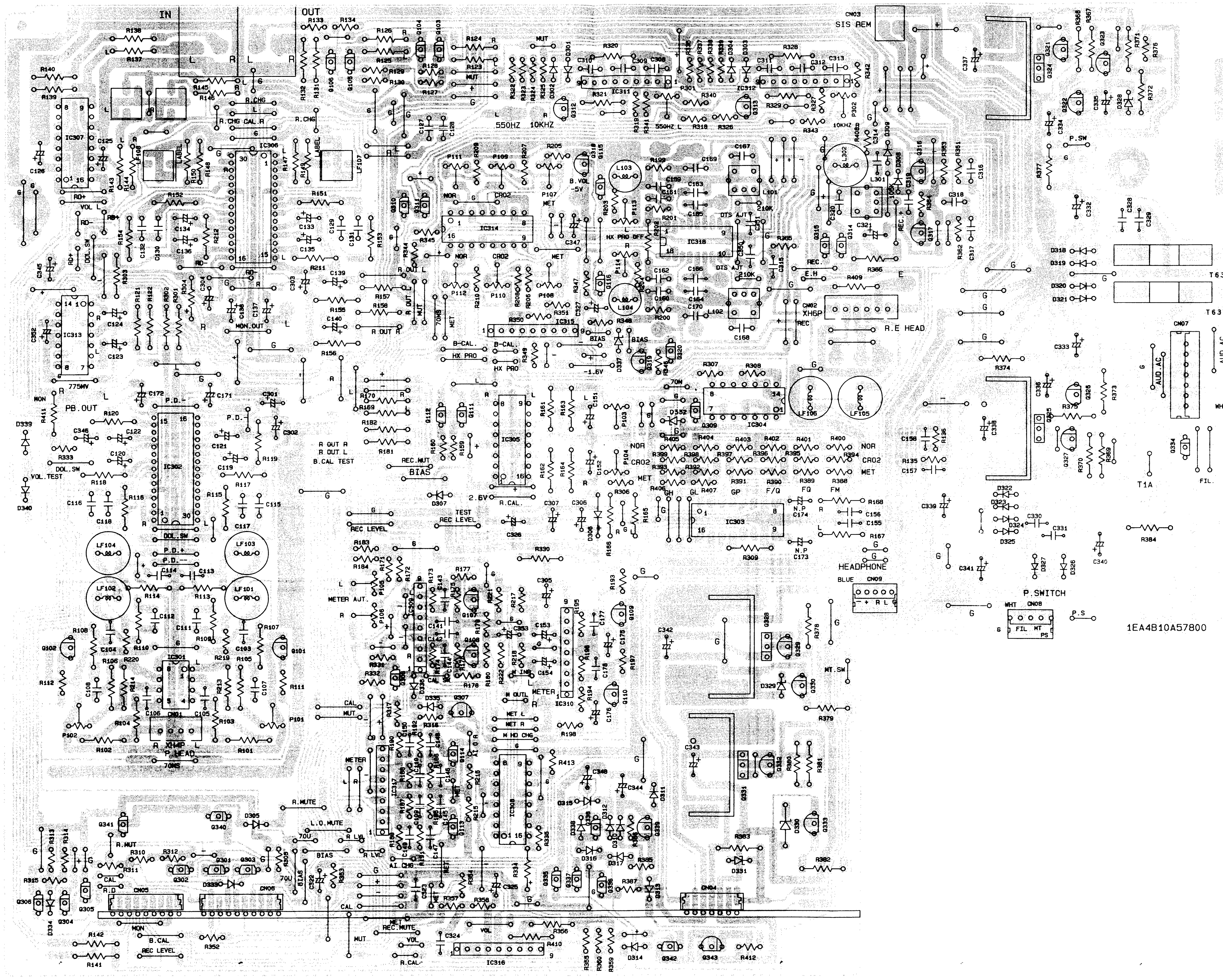
IC PIN NUMBERS DC VOLTAGES																	
Ref. No.	**DEVICE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
IC303	CXA1198AP	1.2V	1.2V	1.2V	0V	−7.2V	0V	0V	−0.1V	0V	0V	0V	7.2V	1.2V	1.2V	1.2V	1.2V
IC304	UPD74HC03C	0V	5.0V	1.2V	5.0V	5.0V	0V	0V	0V	5.2V	5.2V	5.2V	0V	0V	5.3V	–	–
IC305	M5283P	7.9V	2.6V	0V	7.9V	-7.9V	0V	0V	0V	0V	0V	0V	−7.9V	−7.9V	0V	2.6V	7.9V

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	**DEVICE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
IC306	CXA1330S	0V	0V	0V	0V	0.6V	−0.4V	−0.2V	−0.2V	−0.2V	0V	−6.5V	−6.5V	−0.2V	−5.8V	−7.1V	7.0V	0V	−0.2V	−6.5V	−6.5V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		0V	−0.2V	−0.2V	−0.2V	−0.5V	−4.6V	0V	0V	0V	0V	–	–	–	–	–	–	–	–	–	–

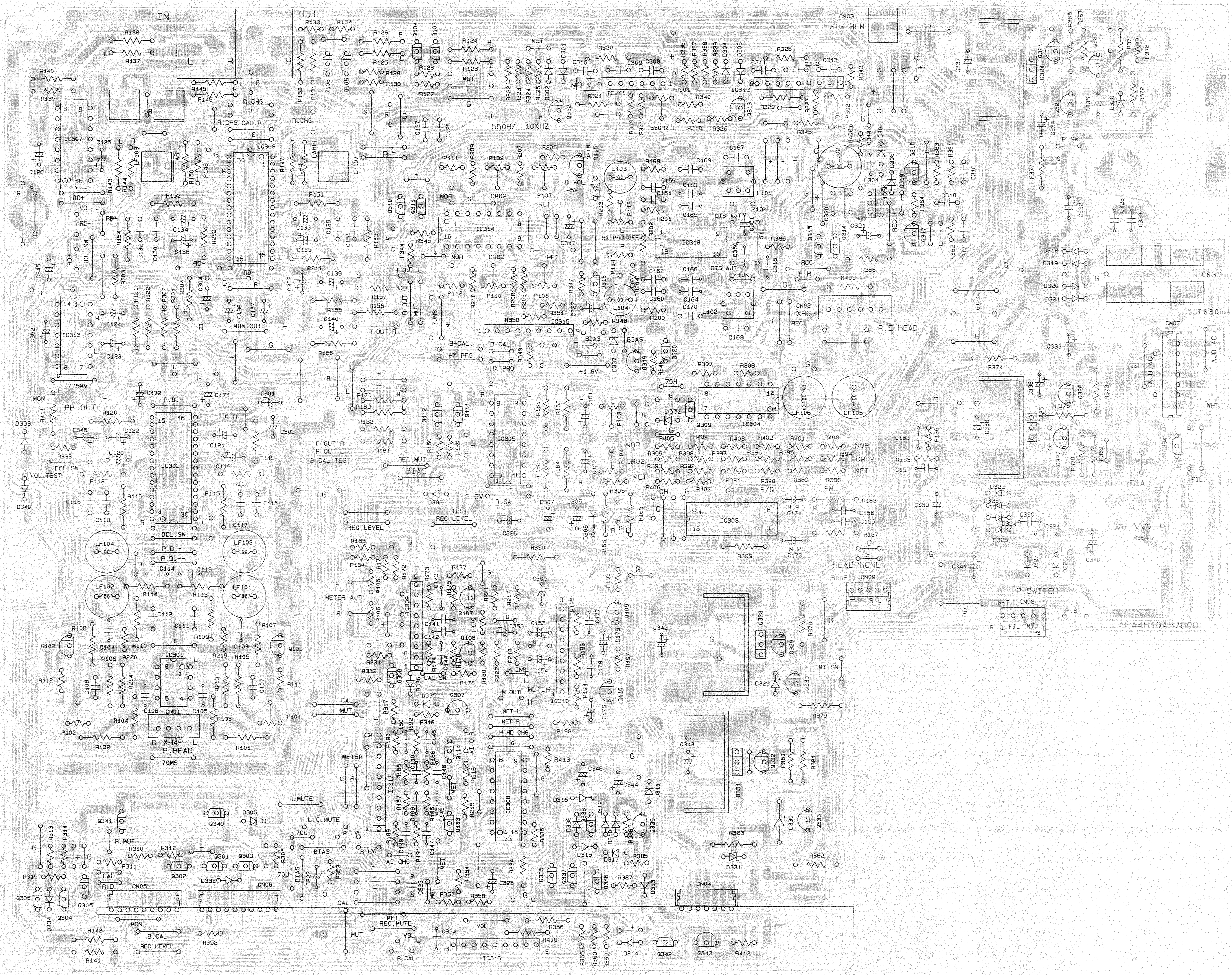
IC PIN NUMBERS DC VOLTAGES																			
Ref. No.	**DEVICE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
IC307	M5283P	7.0V	0.5V	0V	−7.1V	−7.1V	0V	0V	0V	0V	0V	0V	−7.1V	−7.1V	0V	0.5V	7.1V	–	–
IC308	BU4052B	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	6.3V	–	–
IC309	BA4558N	0V	0V	0V	−7.9V	0V	0V	0V	7.9V	–	–	–	–	–	–	–	–	–	–
IC310	BA6138	−0.1V	0V	0.6V	2.0V	0V	2.0V	0.6V	0V	11.0V	–	–	–	–	–	–	–	–	–
IC311,312	BA4558N	2.2V	0V	0V	−7.9V	0V	0V	−5.7V	7.9V	–	–	–	–	–	–	–	–	–	–
IC313	M51551P	−0.6V	0V	−7.9V	0V	7.9V	0V	−0.6V	−0.6V	−0.6V	0V	0V	2.7V	−0.6V	−0.6V	–	–	–	–
IC314	BU4052B	−7.9V	−7.9V	−7.9V	−7.9V	−7.9V	0V	0V	0V	0V	5.0V	−7.9V	−7.9V	−7.9V	−7.9V	−7.9V	5.4V	–	–
IC315	BA4558N	2.5V	2.5V	2.5V	−7.9V	−1.5V	−1.5V	−4.9V	7.9V	–	–	–	–	–	–	–	–	–	–
IC316	M5218L-R	0V	0V	0V	−7.9V	0V	0V	0V	7.9V	–	–	–	–	–	–	–	–	–	–
IC317	BA4558N	0V	0V	0V	−7.9V	0V	0V	0V	7.9V	–	–	–	–	–	–	–	–	–	–
IC318	UPC1297CA	−3.5V	−8.0V	−3.5V	−7.3V	−7.9V	−7.9V	8.0V	7.9V	−7.9V	−6.3V	7.9V	7.9V	−7.9V	−7.9V	−7.3V	−3.5V	−7.9V	7.9V

TRANSISTOR DC VOLTAGES														
Ref. No.	**DEVICE**	**B**	**C**	**E**	**Ref. No.**	**DEVICE**	**B**	**C**	**E**	**Ref. No.**	**DEVICE**	**B**	**C**	**E**
Q321	2SC3331	0V	14.5V	8.6V	Q325	2SA885	−8.6V	−14.9V	−7.9V	Q329	2SC3331	13.0V	20.2V	12.4V
Q322	2SC3331	5.8V	9.2V	5.2V	Q326	2SA608	0V	−9.2V	0V	Q330	2SC3331	0V	0V	0V
Q323	2SC3331	0V	9.2V	0V	Q327	2SA608	−9.2V	−14.9V	−8.6V	Q331	2SC3116	31.2V	35.8V	30.6V
Q324	2SC1846	8.6V	14.5V	8.0V	Q328	2SD2061	12.4V	20.1V	11.8V	Q332	2SC3708	31.7V	35.9V	31.2V

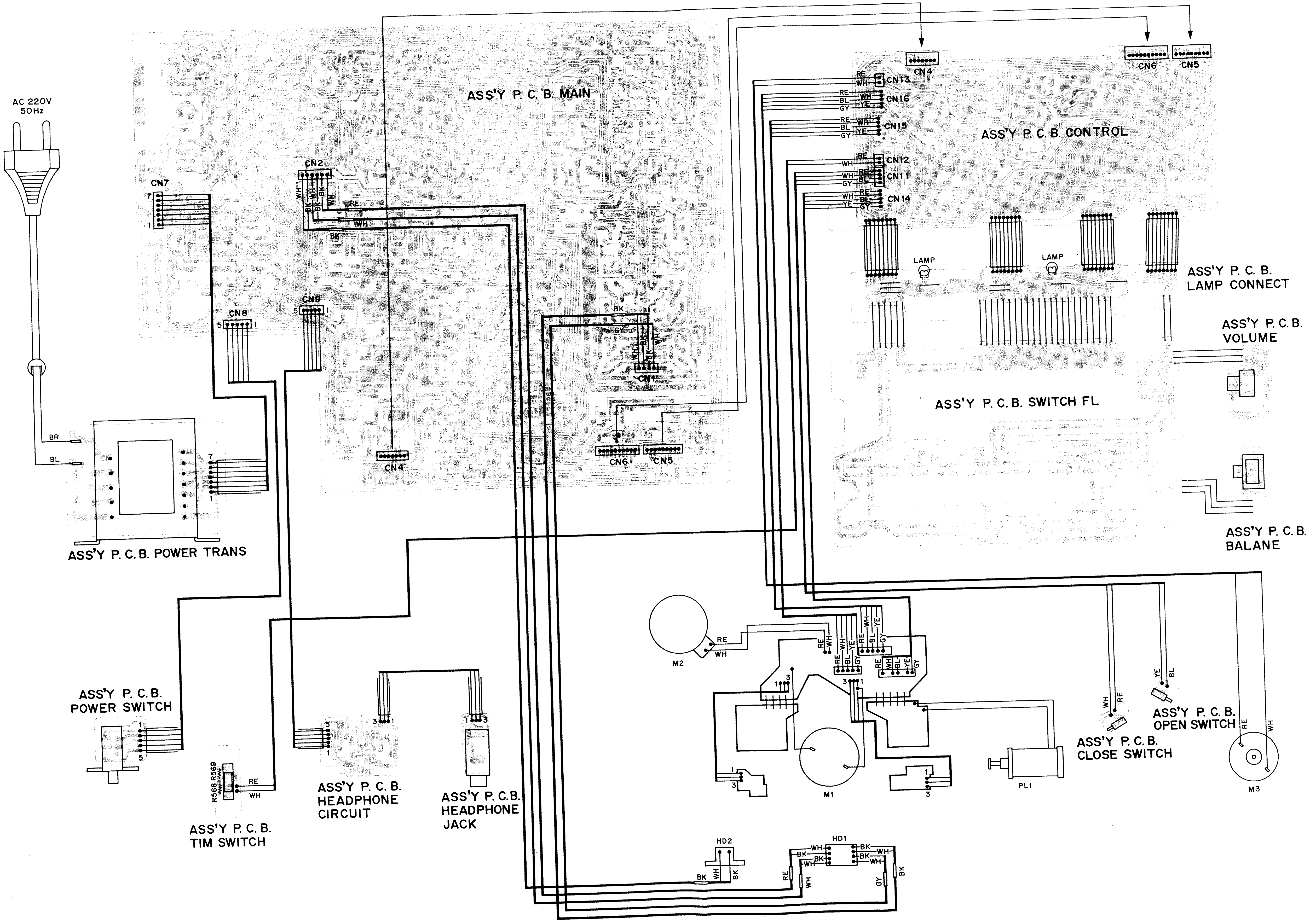
MAIN P.C.BOARD
(BOTTOM VIEW)


IN
OUT
SIS REM
CN03
R.CHG
CAL.R
LABEL
IC306
IC307
IC311
IC312
IC313
IC314
IC315
IC318
IC302
IC305
IC304
IC303
IC301
IC309
IC310
IC317
IC308
IC316
550HZ
10KHZ
NOR
CR02
MET
B.VOL
HX PRO OFF
DTS AJT
REC
E.H
CN02
XH6P
R.E HEAD
BIAS
B-CAL.
HX PRO
775MV
PB.OUT
MON
VOL.TEST
DOL.SW
MON.OUT
R OUT R
R OUT L
B.CAL TEST
REC.MUT
TEST
REC LEVEL
METER AJT.
P.D.
LF101
LF102
LF103
LF104
LF105
LF106
CN01
XH4P
P.HEAD
70MS
GP
F/Q
FQ
FM
N.P
HEADPHONE
BLUE
CN09
P.SWITCH
WHT
CN08
FIL
MT
PS
P.S
T630mA
T630mA
CN07
AUD.AC
WHT
T1A
FIL.
P.SW
MT.SW
R.MUTE
L.O.MUTE
CAL
MUT
METER
AI CHG
R.MUT
R.D
CN05
CN06
CN04
B.CAL
REC LEVEL
REC.MUTE
VOL
R.CAL
1EA4B10A57800

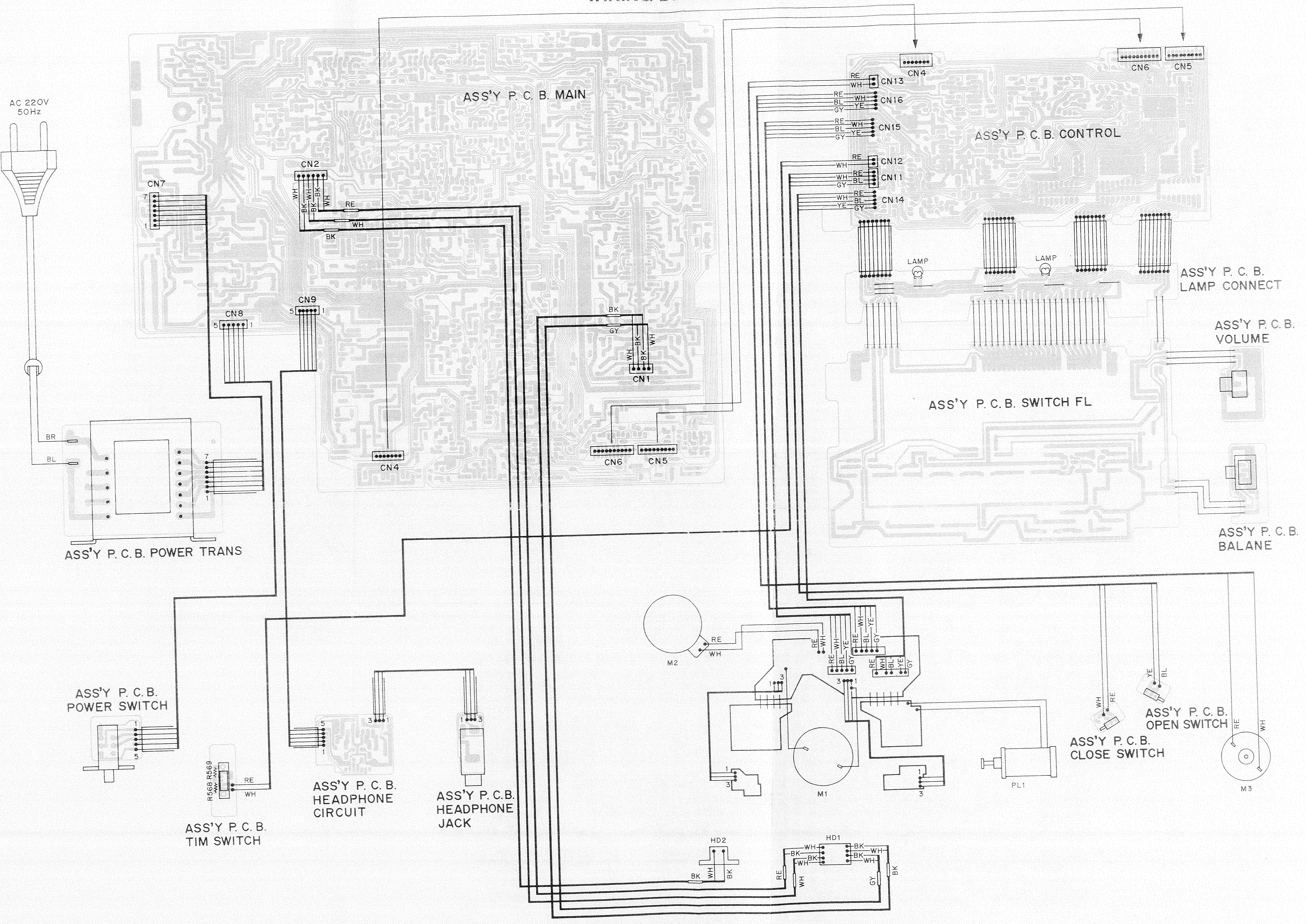
MAIN P.C.BOARD
(BOTTOM VIEW)


IN
OUT
CN03
SIS REM
IC307
IC306
IC314
IC311
IC312
IC318
IC313
IC315
IC302
IC305
IC304
IC303
IC301
IC309
IC310
IC317
IC308
IC316
LF104
LF103
LF102
LF101
LF106
LF105
LF107
LF108
L103
L104
L101
L102
L302
L301
550HZ 10KHZ
HX PRO OFF
DTS AJT
CN02
XH6P
R.E HEAD
REC
E.H
E
T630mA
CN07
AUD.AC
WHT
T1A
FIL.
HEADPHONE
BLUE
CN09
P.SWITCH
CN08
FIL MT
PS
1EA4B10A57800
CN01
XH4P
P.HEAD
70MS
CN05
CN06
CN04
MON
PB.OUT
775MV
DOL.SW
VOL.TEST
REC LEVEL
TEST
REC LEVEL
METER AJT.
METER
R.MUTE
L.O.MUTE
BIAS
CAL
MUT
REC.MUTE
VOL
R.CAL.
B.CAL.
HX PRO
MT.SW
NOR
CR02
MET
R.CHG
R.CHG CAL.R
B.VOL
-5V
-1.6V
2.6V
REC.MUT
B.CAL.TEST
MON.OUT
R OUT R
P.SW
P.S

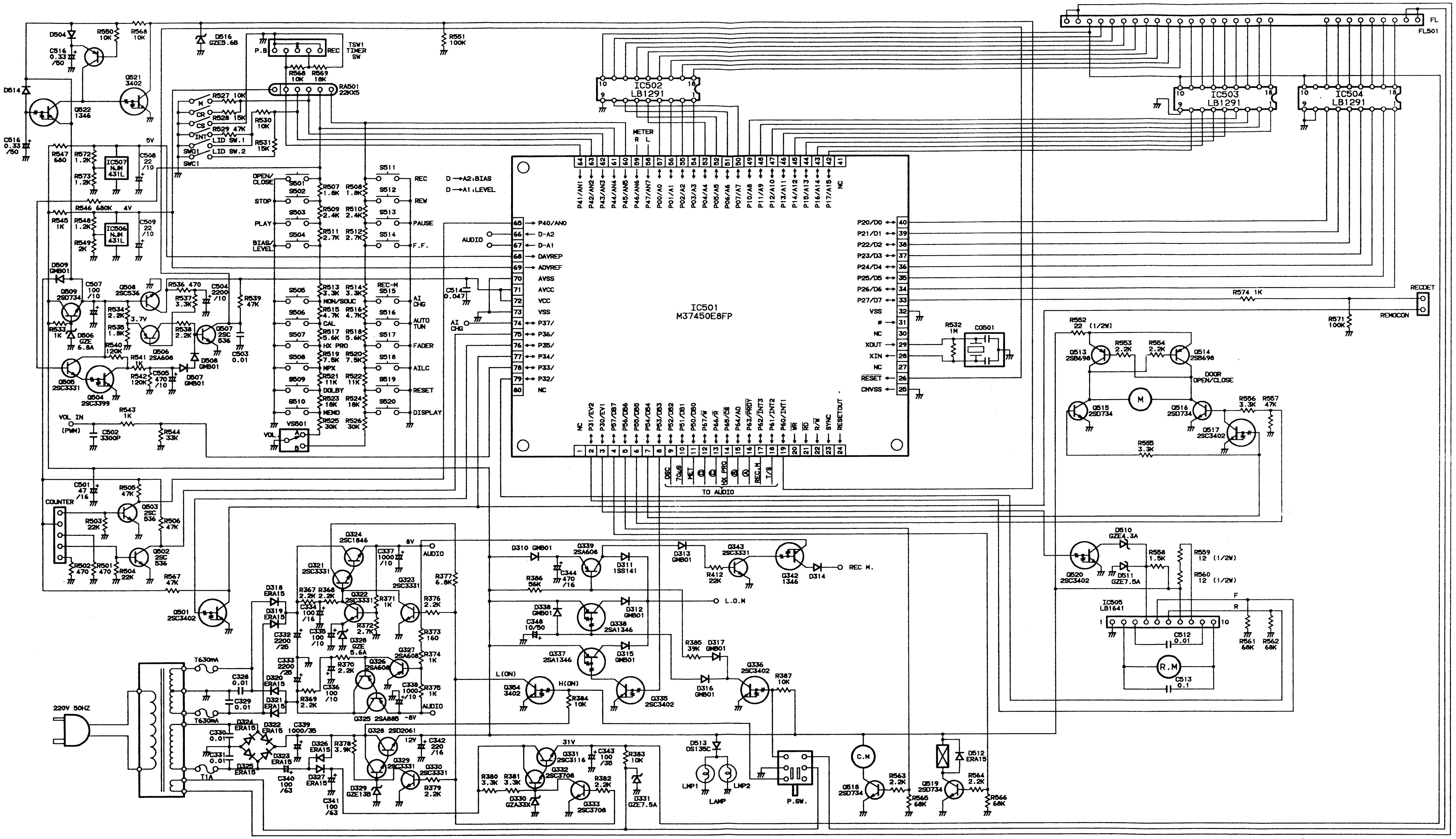
WIRING DIAGRAM


AC 220V
50Hz
ASS'Y P. C. B. MAIN
CN7
CN2
CN8
CN9
CN4
CN6
CN5
CN1
ASS'Y P. C. B. CONTROL
CN13
CN16
CN15
CN12
CN11
CN14
LAMP
ASS'Y P. C. B. LAMP CONNECT
ASS'Y P. C. B. VOLUME
ASS'Y P. C. B. SWITCH FL
ASS'Y P. C. B. BALANE
ASS'Y P. C. B. POWER TRANS
BR
BL
RE
WH
BK
GY
YE
ASS'Y P. C. B. POWER SWITCH
R568 R569
ASS'Y P. C. B. TIM SWITCH
ASS'Y P. C. B. HEADPHONE CIRCUIT
ASS'Y P. C. B. HEADPHONE JACK
M2
M1
PL1
M3
ASS'Y P. C. B. CLOSE SWITCH
ASS'Y P. C. B. OPEN SWITCH
HD2
HD1

WIRING DIAGRAM


AC 220V
50Hz
ASS'Y P. C. B. MAIN
CN7
7
1
CN2
WH
BK
WH
BK
WH
RE
WH
BK
CN8
5
1
CN9
5
1
BK
GY
WH
BK
BK
WH
CN1
CN4
CN6
CN5
ASS'Y P. C. B. CONTROL
CN4
CN6
CN5
RE
WH
CN13
RE
BL
GY
WH
YE
CN16
RE
BL
GY
WH
YE
CN15
RE
WH
CN12
WH
GY
RE
BL
CN11
WH
YE
RE
BL
GY
CN14
LAMP
LAMP
ASS'Y P. C. B.
LAMP CONNECT
ASS'Y P. C. B.
VOLUME
ASS'Y P. C. B. SWITCH FL
ASS'Y P. C. B.
BALANE
BR
BL
7
1
ASS'Y P. C. B. POWER TRANS
ASS'Y P. C. B.
POWER SWITCH
1
5
R568 R569
RE
WH
ASS'Y P. C. B.
TIM SWITCH
5
1
3
1
ASS'Y P. C. B.
HEADPHONE
CIRCUIT
1
3
ASS'Y P. C. B.
HEADPHONE
JACK
M2
RE
WH
RE
WH
RE
WH
BL
YE
GY
3
1
M1
3
1
3
PL1
WH
RE
ASS'Y P. C. B.
CLOSE SWITCH
YE
BL
ASS'Y P. C. B.
OPEN SWITCH
RE
WH
M3
HD2
BK
WH
BK
HD1
WH
BK
BK
WH
BK
WH
BK
WH
RE
WH
GY
BK

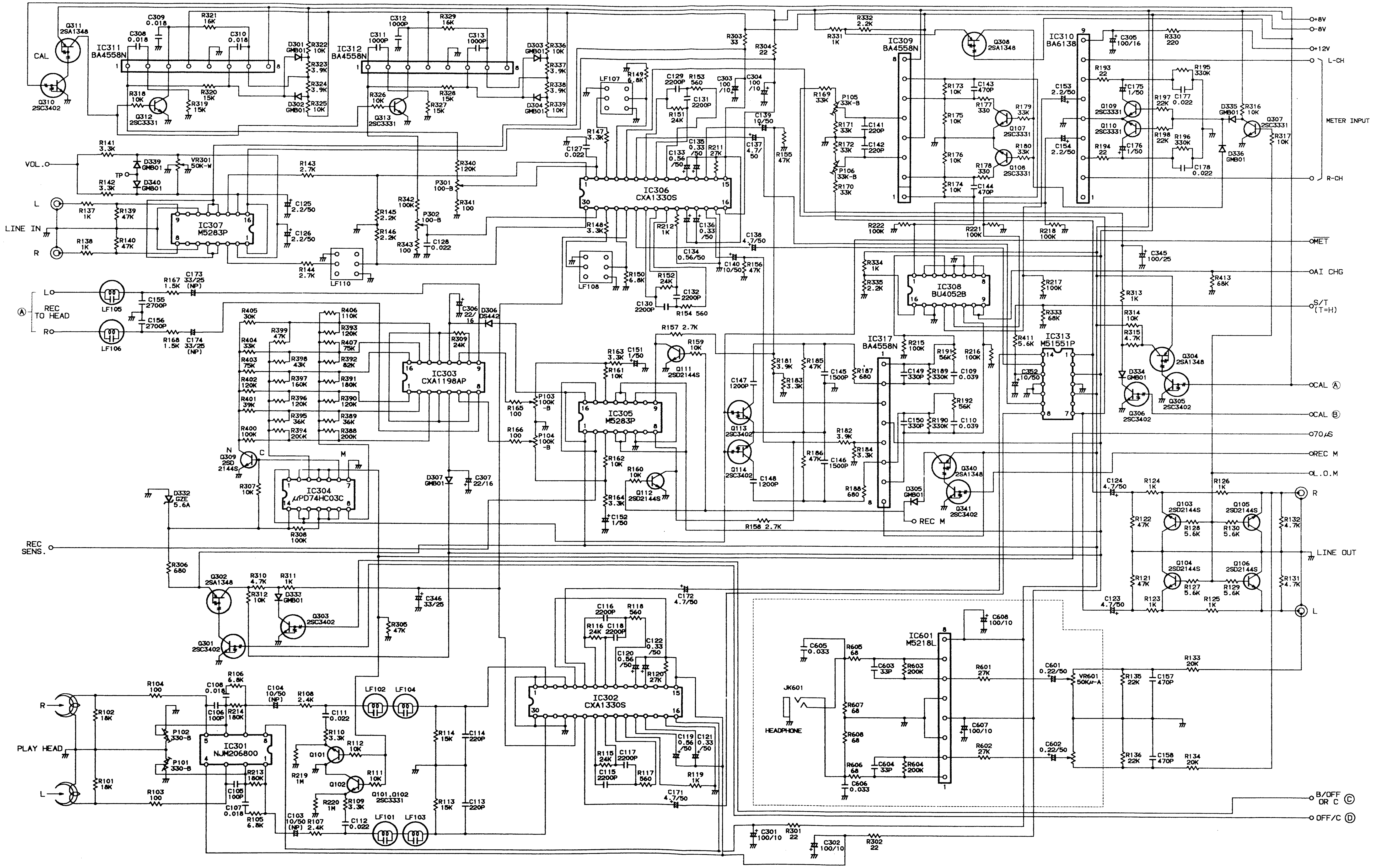
SCHEMATIC DIAGRAM (Control)


IC501
M37450E8FP
IC502
LB1291
IC503
LB1291
IC504
LB1291
IC505
LB1641
IC506
NJM
431L
IC507
NJM
431L
FL
FL501
METER
R L
TO AUDIO
AUDIO
REC
REW
PAUSE
F.F.
AI CHG
AUTO TUN
FADER
AILC
RESET
DISPLAY
OPEN/CLOSE
STOP
PLAY
BIAS/LEVEL
S501
S502
S503
S504
S505
S506
S507
S508
S509
S510
S511
S512
S513
S514
S515
S516
S517
S518
S519
S520
REC-M
MON/SOUC
CAL
HX PRO
MPX
DOLBY
MEMO
VS501
VOL
VOL. IN
(PWM)
D→A2.BIAS
D→A1.LEVEL
TSW1
TIMER
SW
RA501
22KX5
LID SW.1
LID SW.2
SWC1
COUNTER
RECDET
REMOCON
R574 1K
R571 100K
R532 1M
C0501
DOOR
OPEN/CLOSE
M
R.M
C.M
LMP1
LMP2
LAMP
P.SW.
REC M.
L.O.M
L(ON)
H(ON)
220V 50HZ
T630mA
T1A
8V
-8V
31V
12V
P40/AN0
D-A2
D-A1
DAVREP
ADVREF
AVSS
AVCC
VCC
VSS
P37/
P36/
P35/
P34/
P33/
P32/
NC
P20/D0
P21/D1
P22/D2
P23/D3
P24/D4
P25/D5
P26/D6
P27/D7
XOUT
XIN
RESET
CNVSS
Q501 2SC3402
Q502 2SC536
Q503 2SC536
Q504 2SC3399
Q505 2SC3331
Q506 2SA608
Q507 2SC536
Q508 2SC536
Q509 2SD734
Q513 2SB698
Q514 2SB698
Q515 2SD734
Q516 2SD734
Q517 2SC3402
Q518 2SD734
Q519 2SD734
Q520 2SC3402
Q521 3402
Q522 1346
Q321 2SC3331
Q322 2SC3331
Q323 2SC3331
Q324 2SC1846
Q325 2SA885
Q326 2SA608
Q327 2SA608
Q328 2SD2061
Q329 2SC3331
Q330 2SC3331
Q331 2SC3116
Q332 2SC3708
Q333 2SC3708
Q334 3402
Q335 2SC3402
Q336 2SC3402
Q337 2SA1346
Q338 2SA1346
Q339 2SA608
Q342 1346
Q343 2SC3331
D310 GMB01
D311 1SS141
D312 GMB01
D313 GMB01
D314
D315 GMB01
D316 GMB01
D317 GMB01
D318 ERA15
D319 ERA15
D320 ERA15
D321 ERA15
D322 ERA15
D323 ERA15
D324 ERA15
D325 ERA15
D326 ERA15
D327 ERA15
D328 GZE 5.6A
D329 GZE13B
D330 GZA33X
D331 GZE7.5A
D338 GMB01
D504
D506 GZE 6.8A
D507 GMB01
D508 GMB01
D509 GMB01
D510 GZE4.3A
D511 GZE7.5A
D512 ERA15
D513 DS135C
D514
D516 GZE5.6B
R559 12 (1/2W)
R560 12 (1/2W)
R562 22 (1/2W)
R561 68K
R562 68K

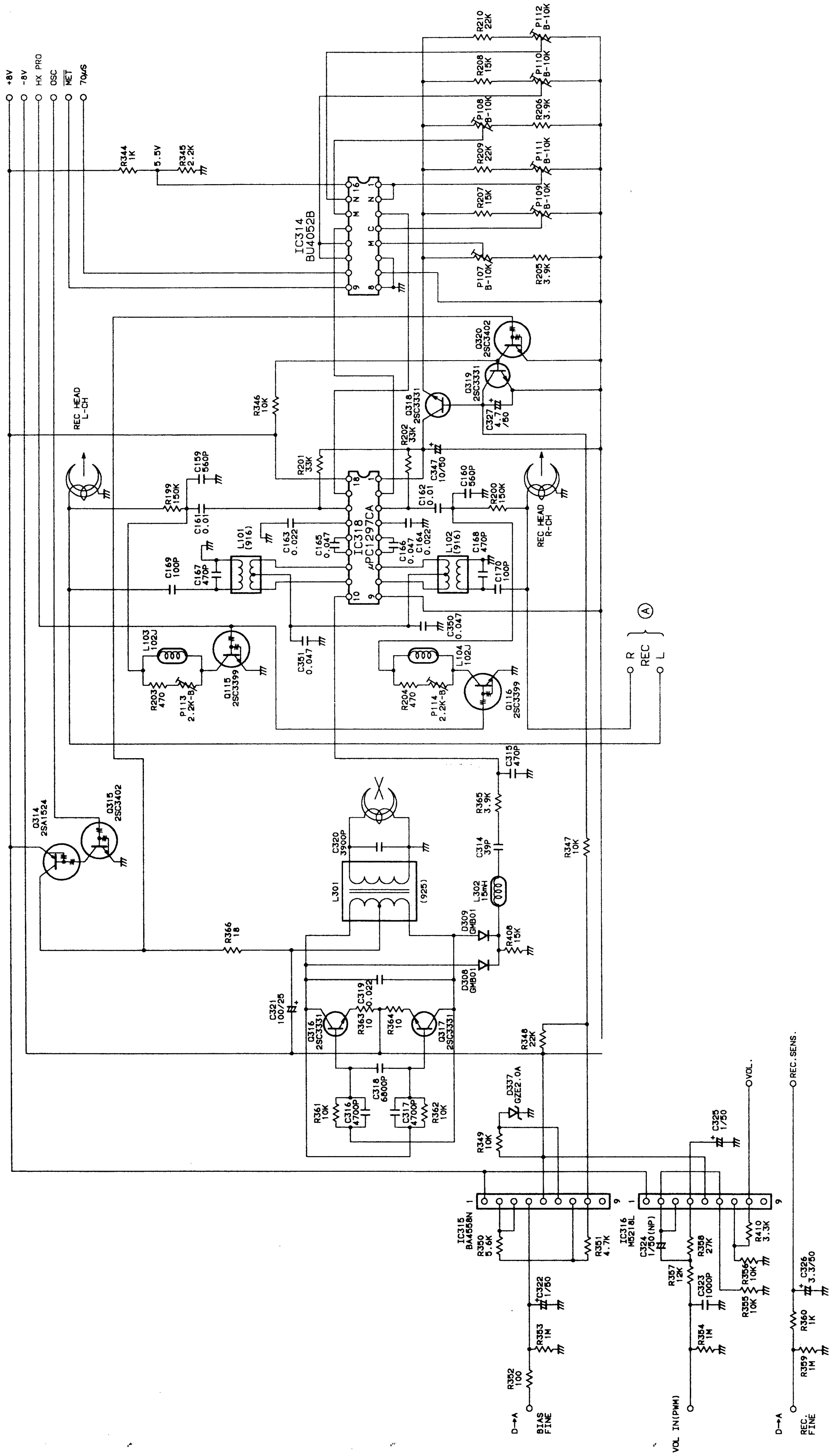
NOTES:

1. All resistors are 1/4 watt or 1/6 watt 5% unless marked. Otherwise Resistor values are in ohms (K=1000 ohms, M=1000k ohms).
2. All capacitor values are in microfarads. (P=picofarads).
3. ⚠ is Safety Part. Use only replacement parts recommended by the manufacturer.
4. This is a basic schematic diagram.

SCHEMATIC DIAGRAM (Amplifier 1)

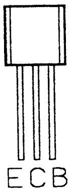
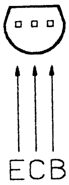
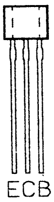
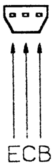
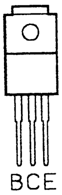
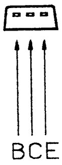

IC311 BA4558N
IC312 BA4558N
IC309 BA4558N
IC310 BA6138
IC306 CXA1330S
IC307 M5283P
IC308 BU4052B
IC303 CXA1198AP
IC305 M5283P
IC317 BA4558N
IC313 M51551P
IC304 μPD74HC03C
IC301 NJM206800
IC302 CXA1330S
IC601 M5218L
CAL
VOL.
LINE IN
L
R
REC TO HEAD
REC SENS.
PLAY HEAD
JK601
HEADPHONE
+8V
-8V
+12V
L-CH
R-CH
METER INPUT
MET
AI CHG
S/T (T=H)
CAL Ⓐ
CAL Ⓑ
70μS
REC M
L.O.M
LINE OUT
B/OFF OR C Ⓒ
OFF/C Ⓓ
LF101
LF102
LF103
LF104
LF105
LF106
LF107
LF108
LF110
VR301 50K-W
VR601 50K/μ-A
Q101,Q102 2SC3331

SCHEMATIC DIAGRAM (Amplifier 2)



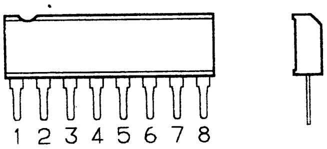
+8V
-8V
HX PRO
OSC
MET
70μS
R344 1K
5.5V
R345 2.2K
IC314 BU4052B
R210 22K
P112 B-10K
R208 15K
P110 B-10K
P108 B-10K
R206 3.9K
R209 22K
P111 B-10K
R207 15K
P109 B-10K
P107 B-10K
R205 3.9K
Q320 2SC3402
Q319 2SC3331
Q318 2SC3331
C327 4.7/50
R346 10K
R202 33K
C347 10/50
REC HEAD L-CH
R201 33K
C159 560P
R199 150K
C161 0.01
C162 0.01
C160 560P
R200 150K
REC HEAD R-CH
IC318 μPC1297CA
C163 0.022
C165 0.047
C166 0.047
C164 0.022
L101 (916)
L102 (916)
C169 100P
C167 470P
C168 470P
C170 100P
C351 0.047
C350 0.047
L103 102J
L104 102J
R203 470
P113 2.2K-B
Q115 2SC3399
R204 470
P114 2.2K-B
Q116 2SC3399
R
REC
L
Ⓐ
C315 470P
R365 3.9K
C314 39P
L302 15mH
R408 15K
D309 GMB01
D308 GMB01
C320 3900P
L301
(925)
R347 10K
Q314 2SA1524
Q315 2SC3402
R366 18
C321 100/25
C319 0.022
Q316 2SC3331
R363 10
R364 10
Q317 2SC3331
C318 6800P
R361 10K
C316 4700P
C317 4700P
R362 10K
R348 22K
D337 GZE2.0A
R349 10K
C325 1/50
VOL.
REC.SENS.
IC315 BA4558N
R350 5.6K
R351 4.7K
IC316 M5218L
C324 1/50(NP)
R358 27K
R410 3.3K
R357 12K
C323 1000P
R356 10K
R355 10K
C326 3.3/50
C322 1/50
R353 1M
R354 1M
R360 1K
R359 1M
R352 100
D→A
BIAS FINE
VOL IN(PWM)
D→A
REC. FINE
1
9
1
9

IC & TRANSISTOR LEAD IDENTIFICATION

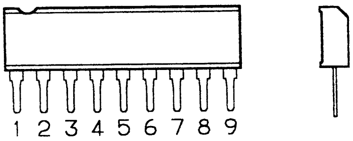
TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SC3331			2SA1346 2SA1348 2SA1524 2SA608 2SC3399 2SC3402 2SC536		
2SD2061					

TERMINAL NAME
B → BASE C → COLLECTOR E → EMITTER

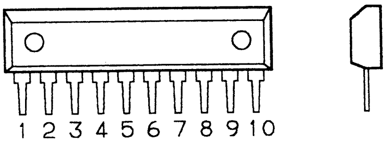
BA4558N FRONT/SIDE VIEWS



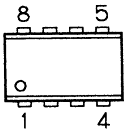
BA6138 FRONT/SIDE VIEWS



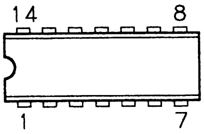
LB1641 FRONT/SIDE VIEWS


1 2 3 4 5 6 7 8 9 10

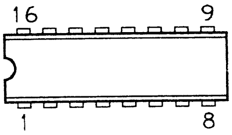
NJM2068DD TOP VIEW



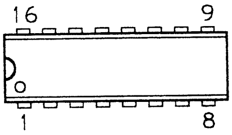
M51551P TOP VIEW
UPD74HC03C TOP VIEW



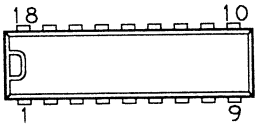
M5283P TOP VIEW



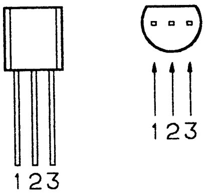
CXA1198AP TOP VIEW



UPC1297CA TOP VIEW

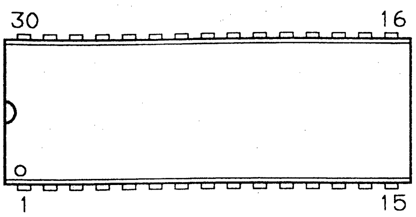


NJM431L TOP/SIDE VIEWS



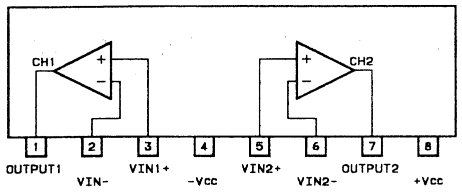
IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

CXA1330S TOP/SIDE VIEWS

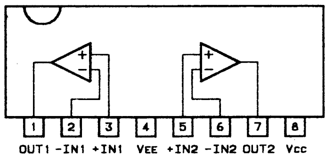


IC BLOCK DIAGRAM

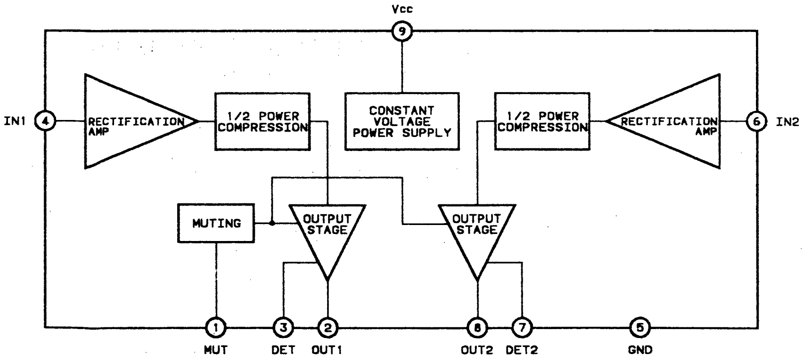
IC316 M5218L-R BLOCK DIAGRAM
(Dual Operation Amp.)


CH1
CH2
+
−
1
2
3
4
5
6
7
8
OUTPUT1
VIN−
VIN1+
−Vcc
VIN2+
VIN2−
OUTPUT2
+Vcc

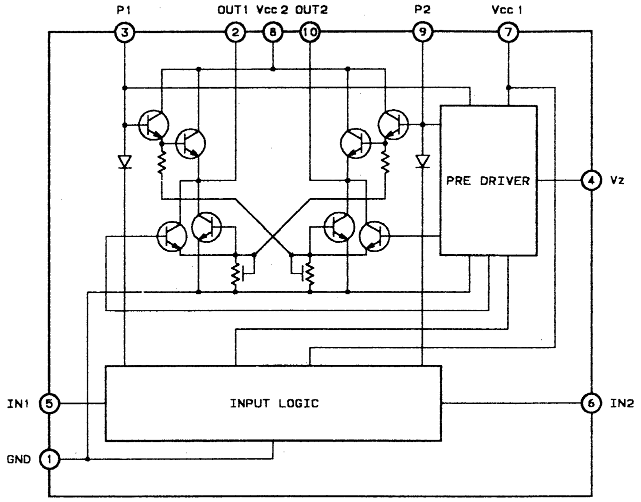
IC309 BA4558N BLOCK DIAGRAM
(Dual Operation Amp.)


+
−
1
2
3
4
5
6
7
8
OUT1
−IN1
+IN1
VEE
+IN2
−IN2
OUT2
Vcc

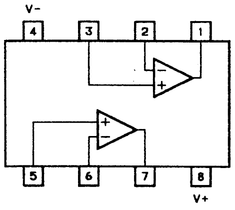
IC310 BA6138 BLOCK DIAGRAM
(Meter Control)


Vcc
9
IN1
4
RECTIFICATION AMP
1/2 POWER COMPRESSION
CONSTANT VOLTAGE POWER SUPPLY
1/2 POWER COMPRESSION
RECTIFICATION AMP
6
IN2
MUTING
OUTPUT STAGE
OUTPUT STAGE
1
3
2
8
7
5
MUT
DET
OUT1
OUT2
DET2
GND

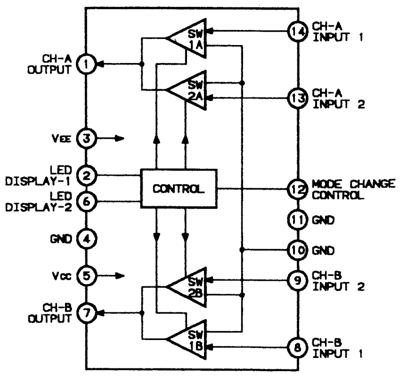
IC505 LB1641 BLOCK DIAGRAM
(Motor Control)


P1
OUT1
Vcc 2
OUT2
P2
Vcc 1
3
2
8
10
9
7
PRE DRIVER
4
Vz
INPUT LOGIC
IN1
5
6
IN2
GND
1

IC301 NJM2068DD BLOCK DIAGRAM
(Dual Operation Amp.)

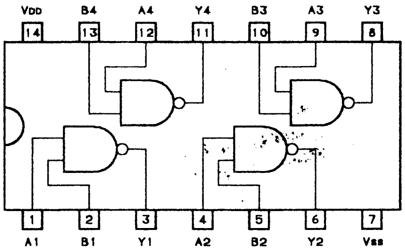

V−
4
3
2
1
−
+
+
−
5
6
7
8
V+

IC313 M51551P BLOCK DIAGRAM
(Dual Mode Electro Switch)

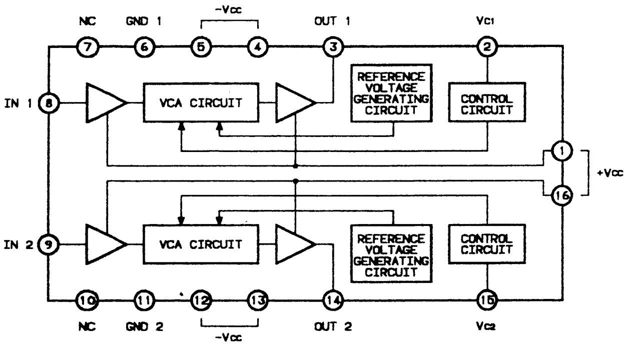

SW 1A
SW 2A
SW 2B
SW 1B
CONTROL
CH-A OUTPUT
1
VEE
3
LED DISPLAY-1
2
LED DISPLAY-2
6
GND
4
Vcc
5
CH-B OUTPUT
7
14
CH-A INPUT 1
13
CH-A INPUT 2
12
MODE CHANGE CONTROL
11
GND
10
GND
9
CH-B INPUT 2
8
CH-B INPUT 1

IC BLOCK DIAGRAM (Continued)

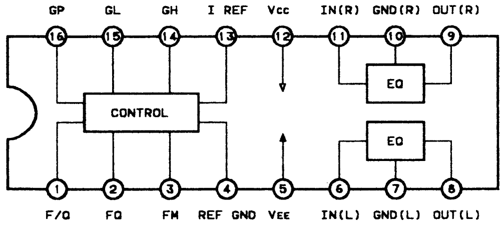
IC304 UPD74HC03C BLOCK DIAGRAM
(NAND Gate)


VDD
B4
A4
Y4
B3
A3
Y3
14
13
12
11
10
9
8
1
2
3
4
5
6
7
A1
B1
Y1
A2
B2
Y2
Vss

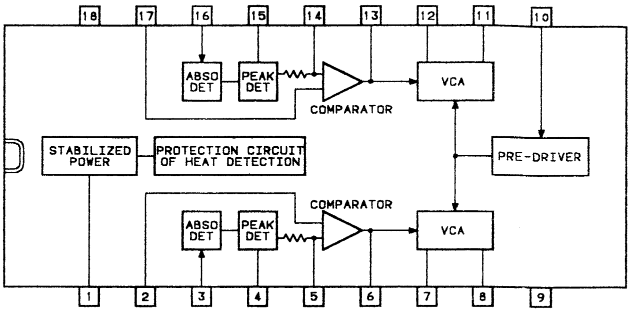
IC305 M5283P BLOCK DIAGRAM
(Dual Voltage Controlled Amp.)


NC
GND 1
-Vcc
OUT 1
Vc1
7
6
5
4
3
2
IN 1
8
VCA CIRCUIT
REFERENCE VOLTAGE GENERATING CIRCUIT
CONTROL CIRCUIT
1
+Vcc
16
IN 2
9
VCA CIRCUIT
REFERENCE VOLTAGE GENERATING CIRCUIT
CONTROL CIRCUIT
10
11
12
13
14
15
NC
GND 2
-Vcc
OUT 2
Vc2

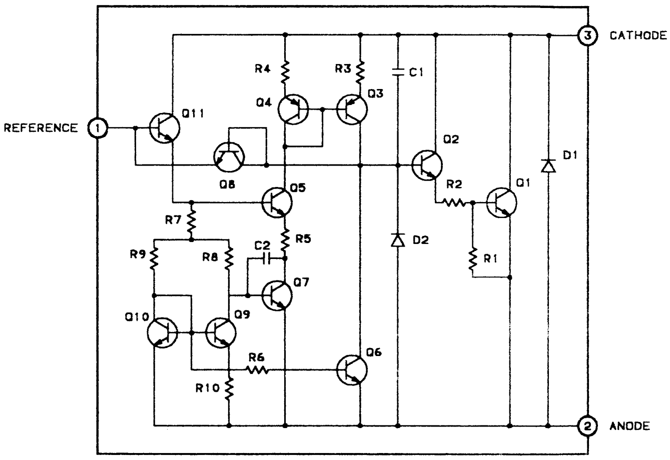
IC303 CXA1198AP BLOCK DIAGRAM
(EQ. Control Amp.)


GP
GL
GH
I REF
Vcc
IN(R)
GND(R)
OUT(R)
16
15
14
13
12
11
10
9
CONTROL
EQ
EQ
1
2
3
4
5
6
7
8
F/Q
FQ
FM
REF GND
VEE
IN(L)
GND(L)
OUT(L)

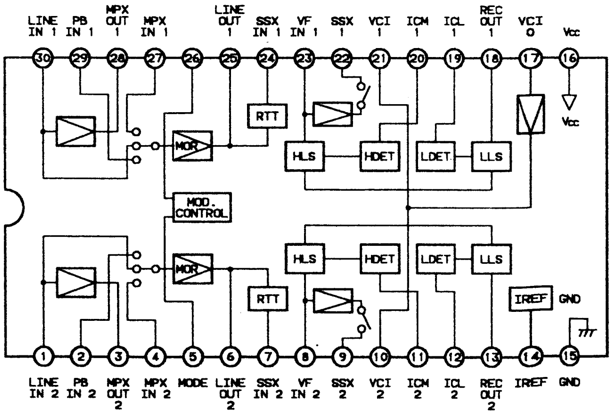
IC318 UPC1297CA BLOCK DIAGRAM
(Dolby HX PRO)


18
17
16
15
14
13
12
11
10
ABSO DET
PEAK DET
COMPARATOR
VCA
STABILIZED POWER
PROTECTION CIRCUIT OF HEAT DETECTION
PRE-DRIVER
COMPARATOR
ABSO DET
PEAK DET
VCA
1
2
3
4
5
6
7
8
9

IC506/IC507 NJM431L BLOCK DIAGRAM
(Constant Voltage)


3
CATHODE
REFERENCE
1
R4
R3
C1
Q4
Q3
Q11
Q2
D1
Q8
Q5
R2
Q1
R7
C2
R5
D2
R9
R8
R1
Q7
Q10
Q9
R6
Q6
R10
2
ANODE

IC302 CXA1330S BLOCK DIAGRAM
(Dolby B/C Noise Reduction)


LINE IN 1
PB IN 1
MPX OUT 1
MPX IN 1
LINE OUT 1
SSX IN 1
VF IN 1
SSX 1
VCI 1
ICM 1
ICL 1
REC OUT 1
VCI O
Vcc
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
RTT
MOR
HLS
HDET
LDET
LLS
Vcc
MOD. CONTROL
HLS
HDET
LDET
LLS
MOR
RTT
IREF
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
LINE IN 2
PB IN 2
MPX OUT 2
MPX IN 2
MODE
LINE OUT 2
SSX IN 2
VF IN 2
SSX 2
VCI 2
ICM 2
ICL 2
REC OUT 2
IREF
GND

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